WATERFORD AREA MANAGEMENT PLAN

CHAPTER II.

INVENTORY AND ANALYSIS OF ISSUES

CHAPTER TWO

INVENTORY AND ANALYSIS OF ISSUES

This section provides basic data, information and analysis of existing conditions and examines the issues for the Waterford planning area. Issues are perceived community conflicts or land use problems that an area plan examines and attempts to solve. The planning, land use and zoning issues regarding the village of Waterford and the related surrounding area are primarily a result of the changing nature of the rural Loudoun landscape from predominantly agricultural to a mixed community of farming and residential land uses. This ongoing land use change and continual growth pressure affects different parts of the County in different ways; in the case of Waterford, the transformation clearly illustrates the differences between the Loudoun County of the past 200 years and the Loudoun County of the 1980's and raises important questions about the way rural Loudoun will grow and change in the future.

During the 18th, 19th and early part of the 20th century, Waterford and the surrounding farmland were closely tied culturally and economically. The village had many businesses and commercial establishments that provided essential services to the nearby farmers, and many of the village residents worked in the village or on the farms. Today Waterford is predominantly a residential community with residents who commute to work elsewhere. In contrast, most of the land around Waterford is still in agricultural land use, but as explained previously and discussed extensively in the Rural Plan, growth pressures and financial uncertainty are contributing to the conversion of farmland to residential land use throughout the County. Thus, the only remaining connection between the village and its rural, agricultural surroundings is one of appearance in that Waterford still looks the same as it did in the past: a small, compact village, surrounded by an open agricultural countryside. It is this largely unchanged appearance that makes Waterford a unique and significant historic resource in the region, state and nation.

I. GROWTH MANAGEMENT, LAND USE AND EXISTING ZONING

A. VILLAGE

1. Growth and Residential Development

The village of Waterford was first settled in 1733 by Quakers who came to Loudoun from Pennsylvania. The majority of the land subdivision was completed by 1816 with actual property development, building construction and street layout occurring throughout the 19th and early 20th centuries. Land around the village was also subdivided, but was kept in larger parcels for farming. The physical size and extent of the village has not changed for 168 years.

Waterford's size remained fairly stable for most of its history with a population of approximately 300 to 400 people into the early 20th century. The 1982 village population 210 reflects a decline that is primarily due to a lower average number of persons per household (2.31)

As indicated in Figure 7, page 19, residential use is the primary land use within the village which currently has 91 dwelling units at an overall density of 1.13 units per acre, primarily on quite small lots. Eliminating three large parcels, these lots have an average size of .45 acres; 24 residences are on lots smaller than one-quarter acre. Growth in the village has been negligible with only one house built in the last seven years. Thus, there can be no realistic projections based on the village's past growth that can be used to predict the future population. The lack of soil percolation for septic fields, the existing ownership intent within the village which up to the present has been not to develop vacant parcels, and the largely unchanging agricultural land use pattern immediately adjacent to the village have combined to create a unique situation in which growth has not R-2 zoning, there are 10 occurred. Based on existing R-1 and properties totaling 60 acres within the village with available land that could be developed to yield an additional 64 units (Table 1, page 20). If these properties are subdivided in a conventional fashion, the site design may not be compatible with the character and scale of the village.

2. Commercial, Office and Institutional Uses

The village has several part-time antique/gift shops, a hardware store, a small grocery, the Loudoun Mutual Insurance Company (13 employees), the offices of the Waterford Foundation (two employees), the office of a historian/map maker and the unmanned office of the C&P Telephone Company. There are no commercial uses outside of the village in the remaining planning area.

The Waterford Foundation, a private, non-profit organization, owns eleven buildings, two fields and one vacant building lot, all under both facade and open space easement. Some of the buildings are used only during the annual three day Waterford Fair and some are used for other community and scheduled activities. The majority of village residents are members of the Waterford Foundation. Additional institutional uses in the village are three churches, a branch of the U. S. Post Office and two cemeteries.

Waterford was originally a mixed use community with businesses, shops, small industries, churches and residences that were located in close proximity to one another throughout the village. In both 1834 and 1920 Waterford had about 20 business and commercial establishments.* Much of this commercial vitality has declined, however, with only a few businesses remaining. Agriculturally related services that were once provided in Waterford are now mostly located in the larger and more accessible towns of Leesburg and Purcellville.

* <u>Gazeteer of Virginia</u>, Joseph Martin, 1835, p. 216

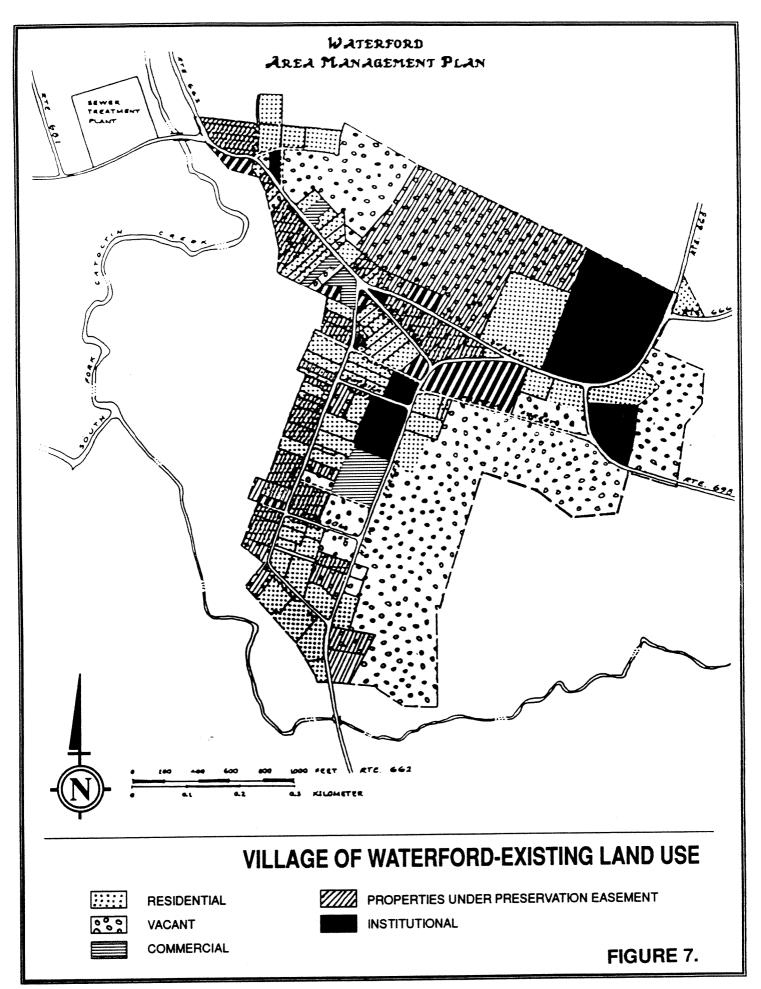


TABLE 1 Vacant Developable Properties in the Village and Potential Additional Units Based on Existing Conditions*

Tax Map #	Acres	Owner	Existing Zoning	Current Use	Existing Units	Potential Additional Units Based on Existing Requirements	
28A1 G-6	1.47	FREEMAN	R-2	VACANT	0	3	
Н-6	.66	HOLMES	R-2	VACANT	0	1	
B-7	9.64	E. JAMES	R-1	FIELD	1	3	
I-1	.98	CUTTER	R-2	WOODED YARD	1	1	
I-14	2.86	BAUMGARDNER	R-1		1	2	
I-15	7.04	BAINE	R-1	YARDS & FIELD	2	5	
I-8	.67	NICHOLS	R-2	YARD	0	1	
G-1A &1B	.50	WATERFORD FOUNDATION	R-2	VACANT	0	1**	
I-6	41.28	PAYETTE	R-1	VACANT	2	44***	
28: 30A	5.15	BAYLY	R-1	YARD & FIELD	1	3	
TOTALS	70.25			·	8	64	

^{*} Assumes availability of on-site water supply.

^{**} Only one unit permitted by easement.
*** If developed under cluster provisions for R-1.

Waterford cannot return to the past when it provided essential business and commercial services to the surrounding agricultural area, but if it is to retain the characteristic diversity of a village and provide for the convenience needs of residents and visitors, it is important to maintain some land for small scale commercial and other nonresidential uses.

The currently zoned 3.75 acres of commercial land is located in the heart of the "downtown" area on Main Street. There are 15 lots and 10 buildings with a total of approximately 24,000 square feet of floor area. Thirty-seven percent of the land area is in residential use, occupied by four houses, which may have to be modified if commercial uses are proposed. Within the remaining 2.4 acres, three lots totaling .65 acres have commercial uses. These include the unmanned C&P Telephone Company building and a part-time art gallery/residence. Of two lots totalling 3,382 square feet of available floor space, one is occupied by a stained glass business and the other is vacant. One of the major hindrances to developing the commercial viability of this area is the lack of parking. This problem may be partially solved if the recommendation for new village parking areas listed in the Transportation section is implemented.

Another commercial issue concerns the kinds of uses permitted as home occupations. Certain uses, such as antique sales, have a nuisance potential as they can result in both commercial intrusions and parking congestion in existing residential sections of the village. These kinds of uses are more appropriately located in commercially zoned areas.

The existing grocery and hardware stores provide essential local convenience services to village residents, but are located outside the commercially zoned area on properties zoned R-2. They are thus nonconforming, "grandfathered" uses that will not necessarily continue if ownership changes. The grocery store is immediately adjacent to properties within the existing C-1 zoning, while the hardware store is surrounded by properties currently zoned residential. If future residential development occurs, there will be an even greater need for the services provided by these establishments. Thus, the grocery store property could be rezoned from residential to commercial with certain conditions and restrictions without setting a precedent for the rezoning of lots nearby or to the south along Second Street. This is not, however, the case with the hardware store whose rezoning would represent spot zoning.

The commercial land use issue is also closely tied to tourism. Expansion of a village tourism program could result in more tourist related businesses locating in Waterford, but these uses would be serving a different clientele and would not be providing services to the agricultural or village community as in the past. Examples of suitable

commercial uses would be restaurants, small inns, and arts and crafts shops. These uses should be located in the downtown commercially zoned area rather than in the rest of the village which is now residentially zoned.

While Waterford has become predominantly a residential community, the positive aspect of this land use change has been the efforts of the residents to maintain the historic architectural character of the village's buildings through private efforts in restoration, rehabilitation and voluntary donation of perpetual easements that have led to Waterford's becoming a nationally recognized historic resource. Sixty preservation easements have been recorded protecting building exteriors and open spaces on both individual lots and larger parcels (Figure 8, page 23). These easements place various kinds of restrictions on the kinds of uses and modifications that can occur to the properties and buildings.

3. <u>Existing Zoning</u> (See Figure 9, page 25)

Zoning specifies the allowed uses and densities of a particular property and reflects a combination of the desires of the local community, the general public interest, County land use goals and policies, and the wishes of individual landowners. In many cases, these factors may not be compatible, thus resulting in land use conflicts within an area. Table 2, page 24 lists the existing zoning districts in the Waterford planning area and the land area within each. Figure 9, page 25 shows the area in each zoning district.

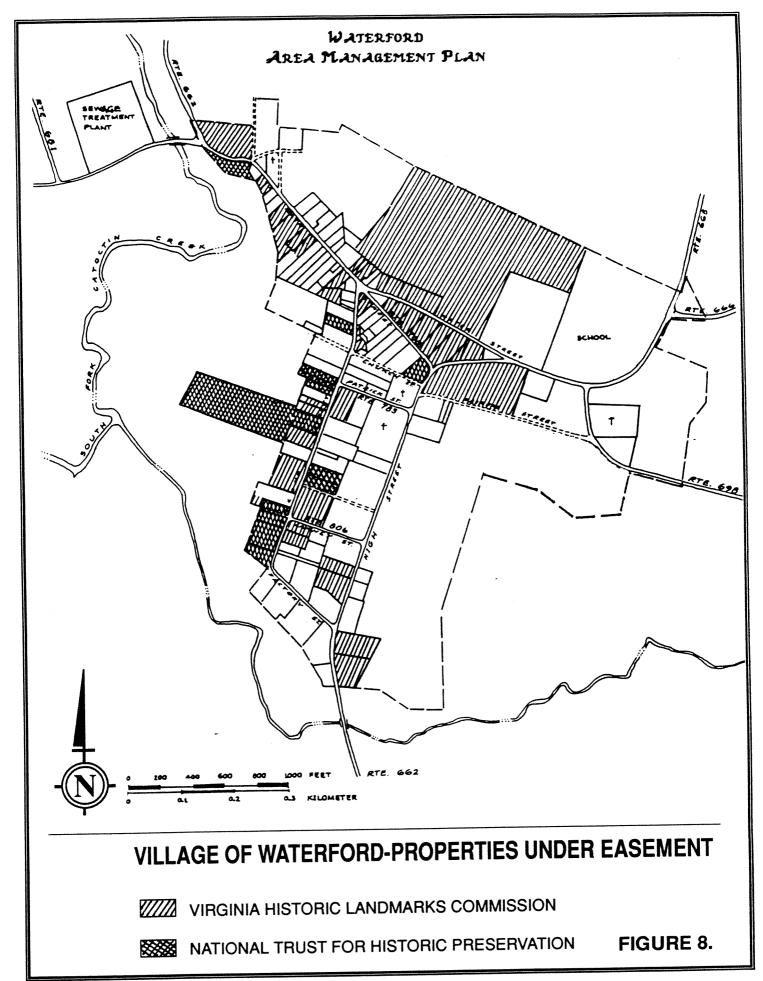


TABLE 2 EXISTING ZONING IN WATERFORD PLANNING AREA

	<u>Village</u> (acres)	Remaining <u>Planning Area</u> (acres)
C-1 (General Commercial):	3.75	0
R-2 (Residential Two Dwelling Units per Acre):	41	0
R-1 (Residential One Dwelling Unit per Acre):	78	96
A-3 (Agricultural/Residential One Dwelling Unit per Three Acres):	0	894.25
F-1, F-2, F-3 (Regulatory 100 Year Flood Hazard District)	_1_	_336
Total	123.75	1,326.25
Historic District Overlay Zone:	and	es (includes all of C-1 I R-2 and 4.5 acres of R- rea)

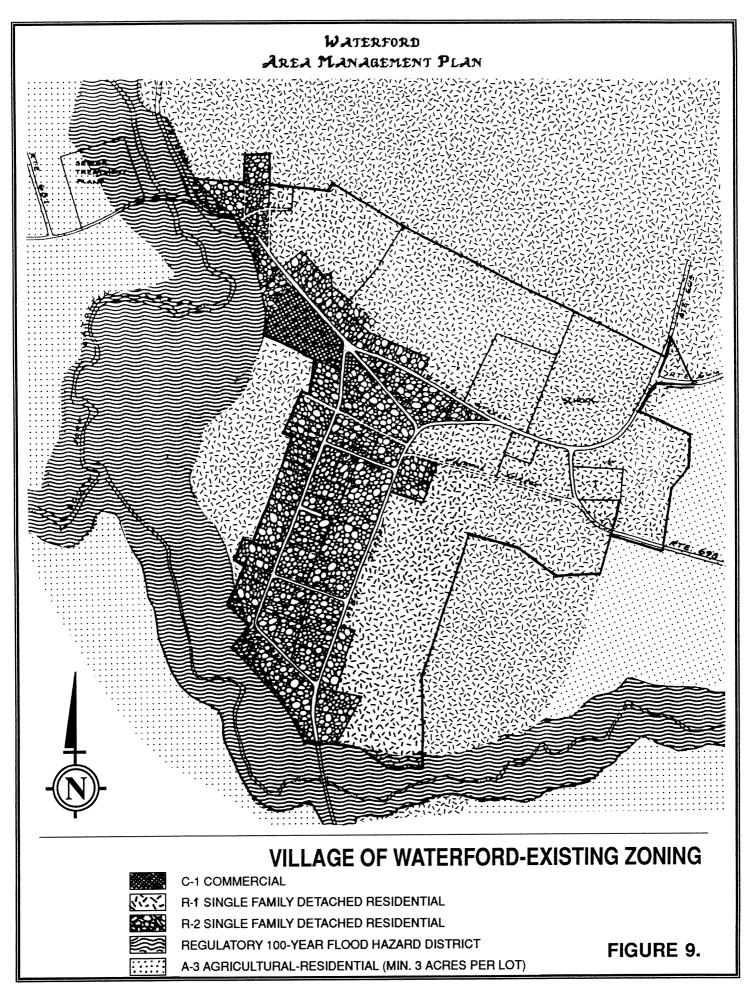
B. SURROUNDING RURAL AREA

1. Agriculture and Rural Residential Development

There are ten dwelling units in the plan's rural area and the population is estimated to be 30 people* with an average of 3 persons per household. Combined with the 210 people in the village, this gives a total planning area population of 240.

Figure 10, page 27 shows the existing land uses in the rural area surrounding the village. There are about 1,278 acres of land presently in agricultural use** in the planning area. The major crops are corn, wheat and hay. Livestock include cattle, horses and sheep.

- Estimate derived from Loudoun County planemetric maps.
- ** Data obtained from Loudoun County Commissioner of the Revenue and the USDA Soil Conservation Service.



The planning area is located within the 18,000+ acre Catoctin Agricultural and Forestal District which was adopted by the Board of Supervisors in 1980 and is scheduled for review in 1988.

The land around Waterford, with its rich soil and ample rainfall, has historically been part of the County's stable long-term agricultural area with many farms owned by the same family for several generations. Due to several factors, including rising land values, increasing rural residential development in the County and the economic difficulties facing Loudoun's farmers whose average age is in the mid-50's, there has been a greater pressure for land conversion to residential uses.

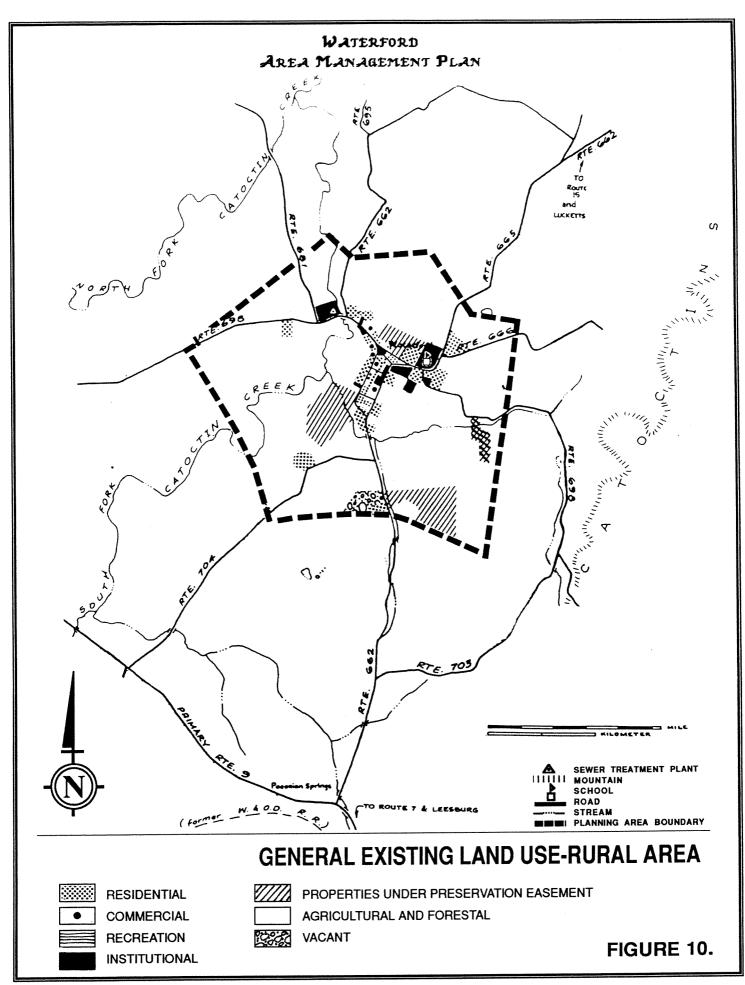
Landowner equity and protection of property values was an important consideration in the development of the <u>Rural Land Management Plan</u> and is an important concern in and around Waterford. For many farmers and farmland owners their land is their retirement fund, and while many wish to keep farming as long as they are physically and financially able, they do not want the government to take any actions that might inhibit their freedom to subdivide and develop their land, or their ability to sell their land for development.

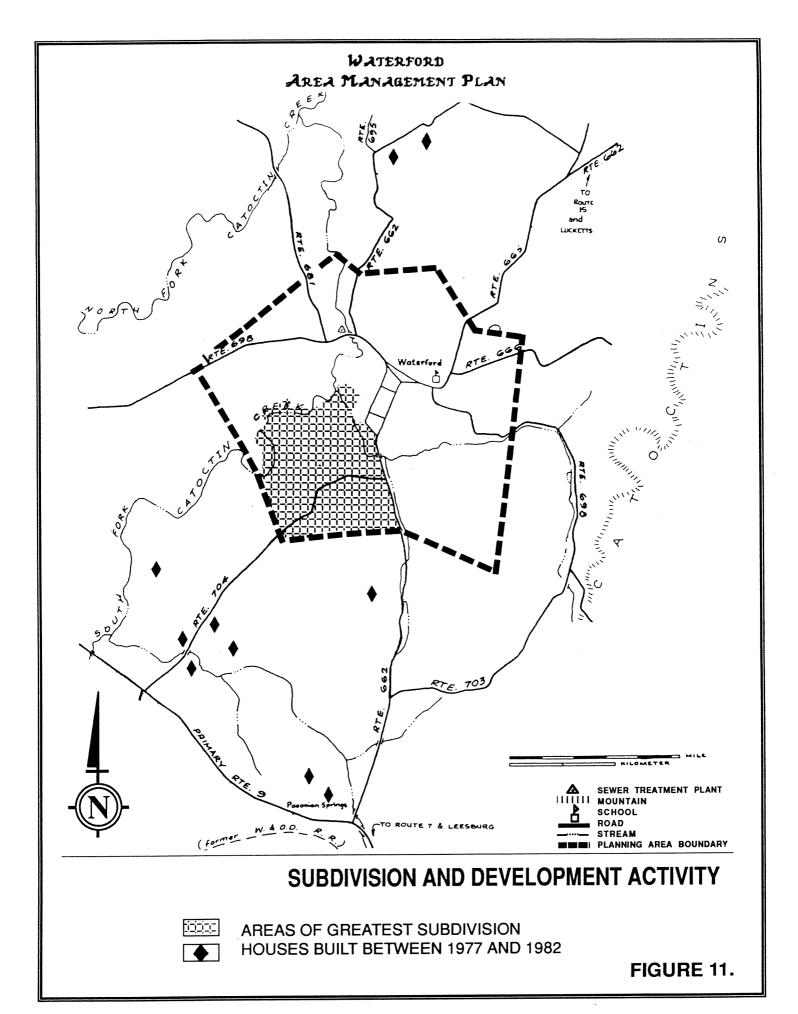
Another aspect of the land value issue is the relatively higher property values around Waterford compared to other rural areas in the County. Analysis indicates that this may be because of the village's historic reputation and character. *

Of the total 1,278 acres currently in farm use, 256 acres are subdivided but are still being farmed. There are seven parcels that are already subdivided, undeveloped and unfarmed in the planning area totalling 33 acres. There are also seven other properties totalling 106 acres that are less than 25 acres and are in the Use-Value Assessment Program. Most of the subdivision activity within the planning area is located along Route 704 and on the west side of Route 662 in lots primarily ten acres or greater in size (Figure 10, page 27). There is also subdivision activity along Route 781 northwest of the village just outside the planning area.

Leased land and absentee ownership are two factors that may indicate speculative owners are either conglomerates of many individuals, or people who do not live on the land but own it for investment purposes, or who are retired farmers, and therefore are probably more likely to sell and/or subdivide the land than a younger owner/operator.

* Memorandum from William C. Gardner, Loudoun County Chief Appraiser, December 14, 1983.





There are properties totalling 226 acres in absentee ownership and properties totalling 405 acres that are leased. (See Figure 12, page 30)* In some instances, these two categories include the same properties.

There are also five properties totaling 241 acres under permanent open space easement in the plan's rural area and along the Waterford Corridor Route 662. (See Figure 13, page 31)

2. Existing Zoning

As indicated in Table 2 and Figure 14, page 32 the rural area around Waterford is predominantly zoned A-3, one dwelling unit per three acres (894 acres) with the remainder in R-1, one unit per acre (96 acres). When the average development in rural Loudoun of one unit per seven acres** is applied to this area, there is a potential for approximately 141 additional dwelling units.

II. PUBLIC FACILITIES AND UTILITIES

A. SEWAGE TREATMENT AND WATER SUPPLY

1. Village

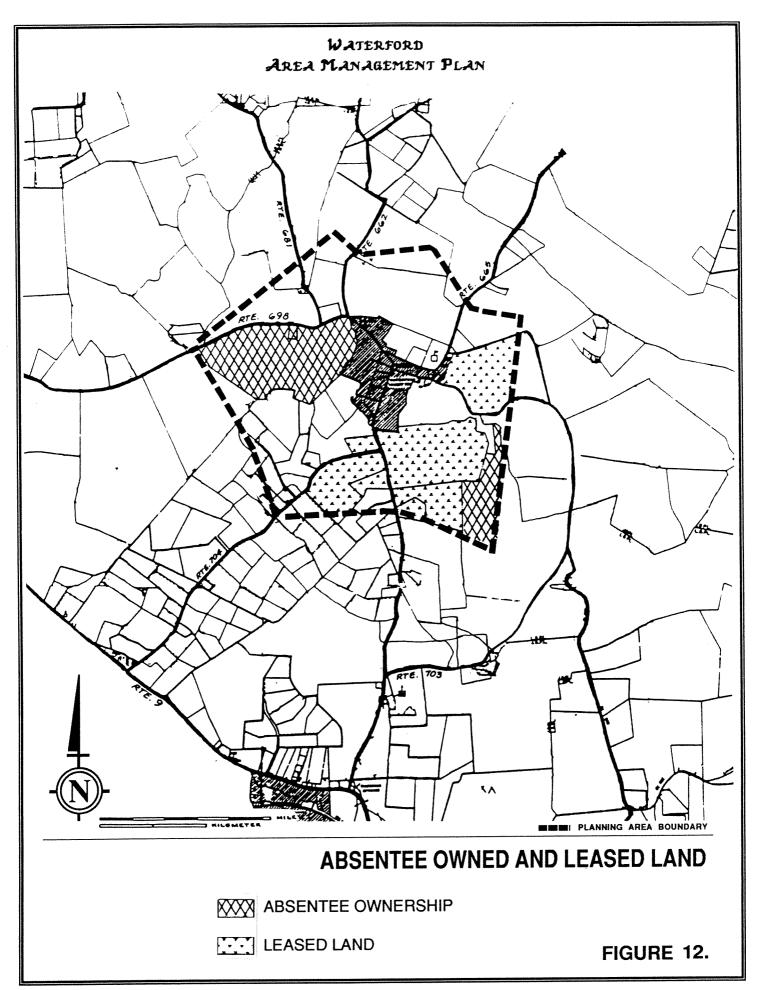
a. Sewage Treatment:

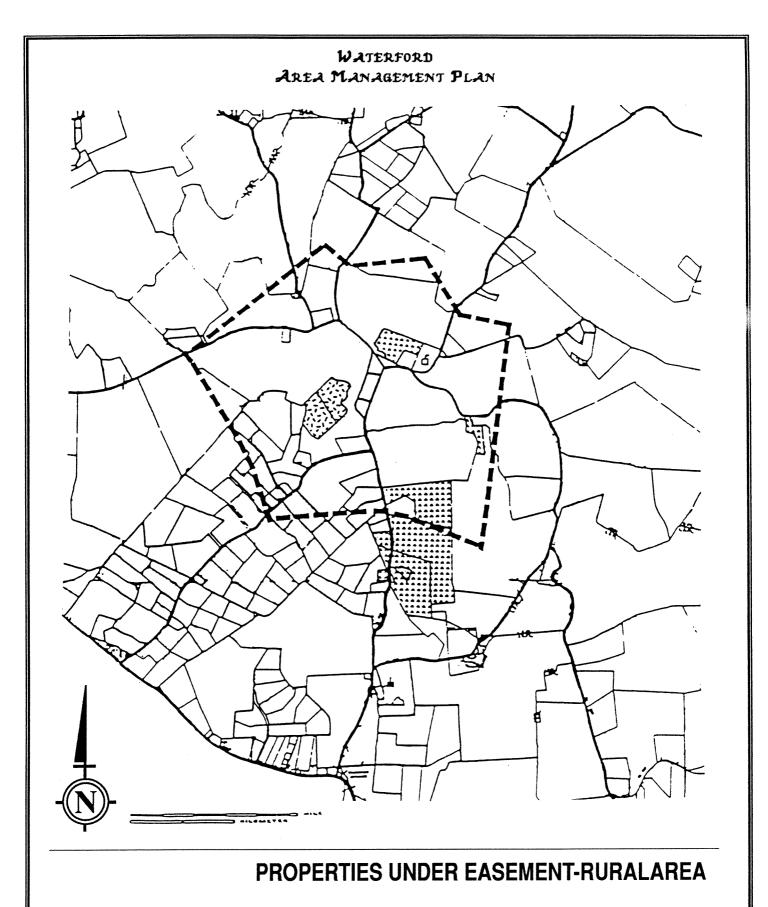
Waterford is served by a wastewater treatment plant that is owned and operated by the Loudoun County Sanitation Authority (LCSA). Figure 14A, page 32A shows the location of the plant and existing sewer lines. The facility was built for the purpose of solving a potentially severe health problem due to malfunctioning septic systems and was not constructed to encourage additional growth in the village. It began operation in 1978. The plant has 60 existing connections of a possible total of 115 buildings in the village and a current flow of approximately 10,000 GPD (gallons per day).

The sewage treatment plant was designed with a total capacity of 58,000 GPD to serve a projected population for the

^{*} Data obtained from Loudoun County Commissioner of the Revenue and U.S.D/A/Soil Conservation Service.

^{**} Assuming new development in rural Loudoun, regardless of existing zoning, occurs at an average density of one unit per seven acres due to road frontage, septic limitations, environmental constraints and owner's desire. Also excluding land placed under open space easement.

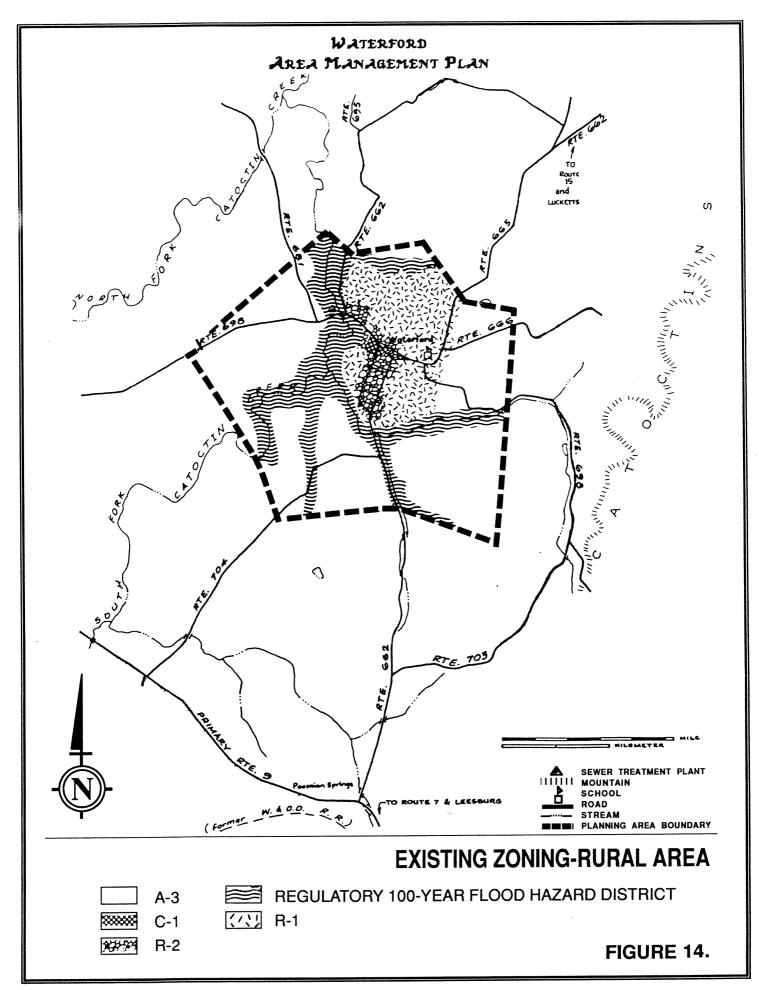


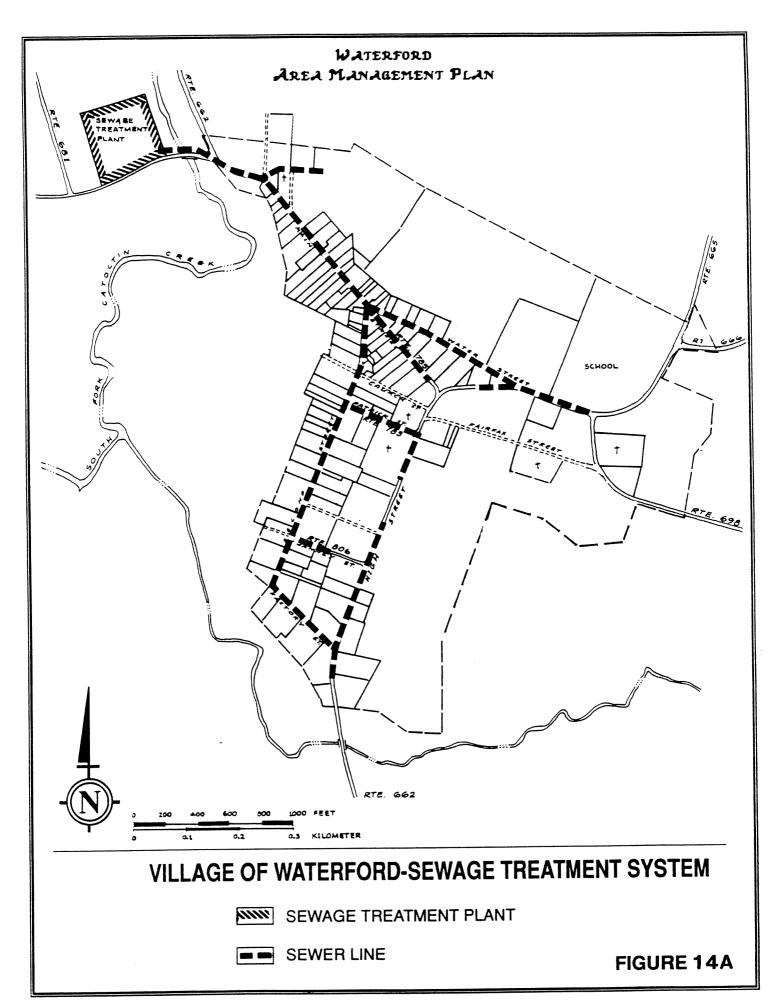


VIRGINIA HISTORIC LANDMARKS COMMISSION

VIRGINIA OUTDOORS FOUNDATION

FIGURE 13.





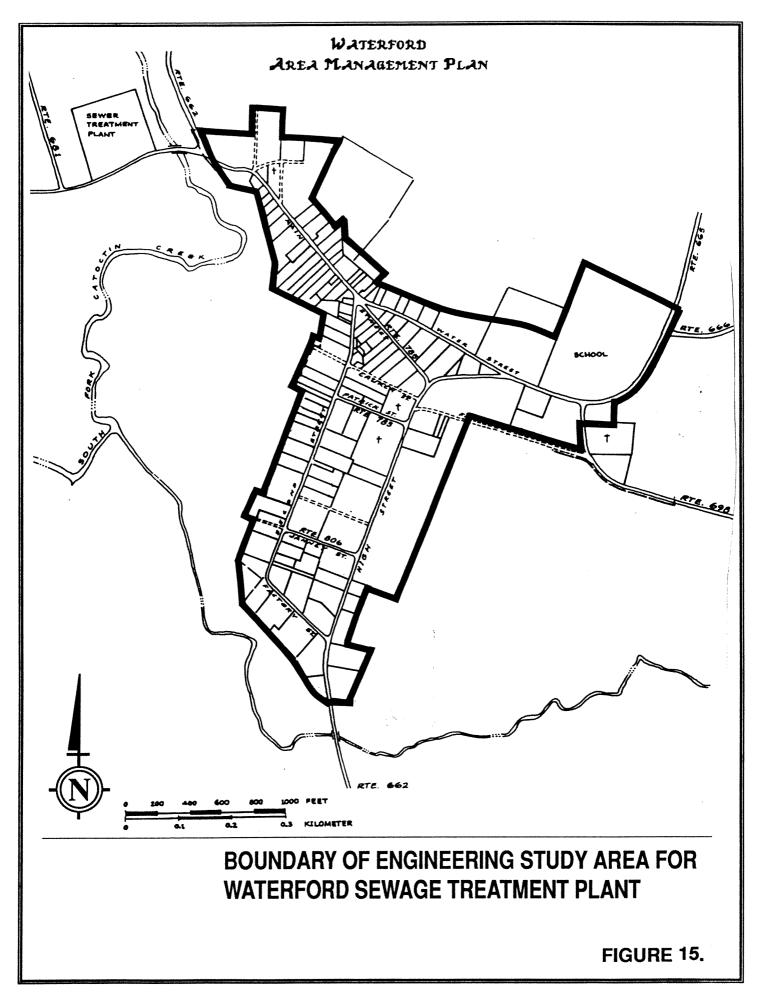
year 2000 of 557 people which now appears high considering that the population was only 210 people in 1982. This is due to the fact that the population forecasts were based on inaccurate information in that the 1965 estimated village population of 434 was probably too high. The plant is large enough to serve all of the existing 115 buildings and approximately 75 additional connections depending on flow rates. Assuming a small percentage of this would be nonresidential uses, the plant could provide service to an estimated 67 to 135 additional dwelling units.

The plant was built with a combination of Federal, State and County funds. The LCSA's policy is to ensure that properties within the engineering study area for the plant. (Figure 15, page 34) will be guaranteed capacity and service in the plant. Based on existing zoning, there could be 64 additional dwelling units built on vacant parcels in the village (Table 1, page 20) leaving a remaining plant capacity for another 47 to 115 units to hook up. This excess capacity and future potential expansion capacity should be used in a legal and regulated manner to assist in achieving the goals of this plan.

If this additional residential development does occur, it will do so incrementally over a period of time and will be influenced by many other factors including water supply, zoning requirements, road capacity and access, land and building prices, the local and regional housing market, property size and location, County policy, landowner intent and overall land use impact. The important point is that central sewer service is not a constraint to growth and that there is sufficient capacity to add about 75 buildings to the existing 115.

One of the principal methods available to manage the growth and development density in and around the village is for the <u>Waterford Area Management Plan</u> to develop policies regarding connections to the treatment plant. It is the present position of the LCSA that the decision to provide service to any properties outside of the service area line shown in Figure 14 should be determined by the County's growth management policies for the Waterford area. This could be accomplished by proposing a Village Limit Line (VLL) for the <u>Waterford Area Management Plan</u> similar to the Urban Limit Line (ULL) concept established for Leesburg in the adopted <u>Leesburg</u>

<u>*Feasibility Study on Water and Sewerage Facilities for the Community of Waterford,</u> prepared for Loudoun County Board of Supervisors, Greenhorne, O'Mara, Dewberry and Nealon, 1966.



Area Management Plan (p. iii) and proposed in the Rural Land Management Plan (p. 232) for use around the County's five other incorporated towns with central sewer and water facilities: Purcellville, Hamilton, Round Hill, Middleburg and Lovettsville. Sewer capacity could also be used to encourage density reduction to serve cluster development in areas which have high visual absorption capacity rather than in random areas determined solely by soil percability.

Another issue is the potential health problem caused by existing septic systems which may be contaminating wells in the village (discussed further in the Environmental Section).

b. Water Supply:

Waterford residents are served by individual well systems. Studies of geologic conditions and an analysis of existing well yields indicate that local subsurface conditions vary in their ability to provide a sufficient and reliable supply of potable water for individual and community needs. During the period of acquiring grants to build the sewer plant, funds were also sought for the construction of a central water system. The project was abandoned, however, when available financing could not be found.

The current situation that relies on numerous private well systems has several drawbacks, including increased expense and difficulty for the homeowner when wells run dry or produce low yields, dependence on two small local ponds and Catoctin Creek for fire control and possibility of contamination from failing drainfields. All of these problems could be addressed with the construction of a central groundwater supply system that could be owned and operated by the LCSA in conjunction with the existing sewage treatment plant.

There are several issues which would have to be addressed including availability of water and system cost, both capital and operating. Preliminary assessments of local geologic conditions indicate that there may be formations that will provide sufficient yields to serve the village, but the system may require several wells to generate a stable, long-term supply.* Without detailed study, field work and analysis comparing the costs and benefits (both monetary and social) of a central public versus individual private systems as well as important considerations such as the number of wells that

* Information obtained from the Loudoun County Health Department

need to be drilled, actual locations, capital and operating costs, and system management cannot be determined.

Another issue related to a central water supply system is the design and appearance of a storage tank which would not be visually incompatible with the National Historic Landmark village and its scenic, agricultural setting.

2. Surrounding Rural Area

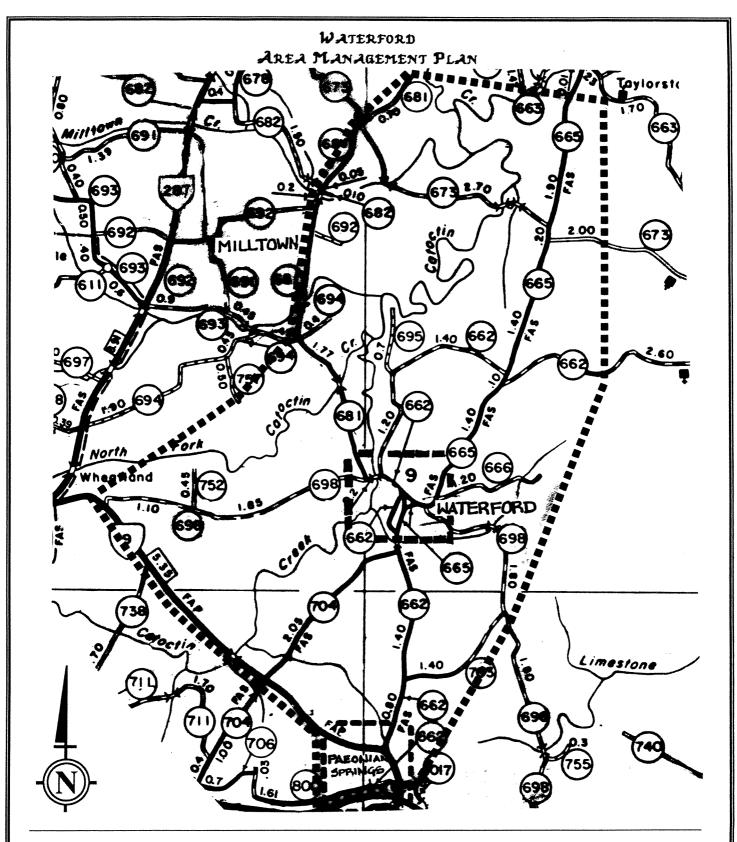
Both sewage treatment and water supply are provided by individual septic systems and private wells in the rural area as agriculture is the predominant land use and residential development is at a very low density. If future growth does occur in the rural area, it will be in the form of subdivisions of three to ten acres with the actual density determined by zoning requirements, existing road frontage and soil permeability. If a rural residential cluster development is proposed, it can be serviced by a mass drainfield and well system if certain policies and requirements of the County and the State Health Department are met.

B. ELEMENTARY SCHOOL

The Waterford Elementary School was built in 1965 and is located on Route 665 just north of the village. The school has a design capacity of 190, a use capacity of 140 and a September, 1983 enrollment of 80. Children in the planning area attend Blue Ridge Middle School and Loudoun Valley High School in Purcellville. The attendance area for the school is shown in Figure 16, page 37.

Waterford Elementary School is classified as one to the County's small schools many of which have experienced a decline in enrollment causing an increase in operating costs per pupil. As a result of this, these schools have been reviewed for operation alternatives.* The school age population in the area served by the school has declined from 143 students in 1977 to 80 in 1982, a drop of 44%. Excluding debt service and transportation costs, the total operating cost for the school in 1979 - 1980 was \$1,277 per pupil. This figure does not compare favorably with those of a typical eastern Loudoun School, such as Meadowland Elementary (built in 1979), at \$732 for the 1979 - 1980 school year. On the other hand, because Waterford Elementary was built fourteen years earlier (1965 versus 1979), the debt service cost per pupil of \$63 is much less that Meadowland's \$536. When operating and debt service costs are factored together, the two schools have comparable total per pupil costs of \$1,340 for Waterford and \$1,267 for Meadowland.

"Report of the Small Schools Study", Loudoun County School Board, May 26, 1981



WATERFORD ELEMENTARY SCHOOL ATTENDANCE AREA

FIGURE 16.

The athletic fields adjacent to the school building are used by the County Parks and Recreation Department and the Waterford Citizens' Association for organized soccer, Little League Baseball and local softball from May through August and thus provide an important recreation function for the community. There are also tennis courts available for public use. The fields were improved and are frequently maintained by community volunteers.

The school is used during off hours by several community groups, such as the 4-H Club and the League of Women Voters. In addition, the community is extensively involved in providing volunteer assistance averaging 125 to 130 hours per month. This amount of volunteer time is about average for all County schools, but much higher in terms of number of hours per pupil and thus is quite remarkable when the 80 student enrollment of Waterford is compared with that of County middle and high schools which have over 1,000 students. A significant portion of this volunteer time is given by individuals in the community who do not have children enrolled in the school. Thus, the volunteer program indicates a strong commitment by the community to the school and should be considered along with debt service cost when the School Board reviews enrollment and operating costs.

Waterford Elementary is centrally located and could provide service to more of the north-central rural portion of the County between Routes 287 and 15 if future growth occurs in this area. Considering the potential for growth in the village, it can be anticipated that school enrollment figures might increase during the next ten to twenty years. The school also participates with the community in the annual three day Waterford Fair by providing hot lunches and dining facilities to visitors with the revenue retained and used for various school activities and programs.

A final factor to consider is that the Waterford School has been an integral feature of the community for many years. While new and large 720+ student elementary schools may be able to provide specialized instructors and equipment, a small rural school such as Waterford's has the ability to treat each child as an individual both in terms of his family and as a member of the immediate rural or village community. In addition, the school provides the unique opportunity for village residents and their farm neighbors to come into contact with each other, thereby providing an important community identification.

C. ELECTRIC AND TELEPHONE

Within the village, telephone service is provided by Chesapeake and Potomac (C&P), and electric service is handled by Virginia Power. All of the utility lines are connected by wires on aboveground poles and are a detraction from the historic, architectural quality of the village.

III. TRANSPORTATION

A. BACKGROUND

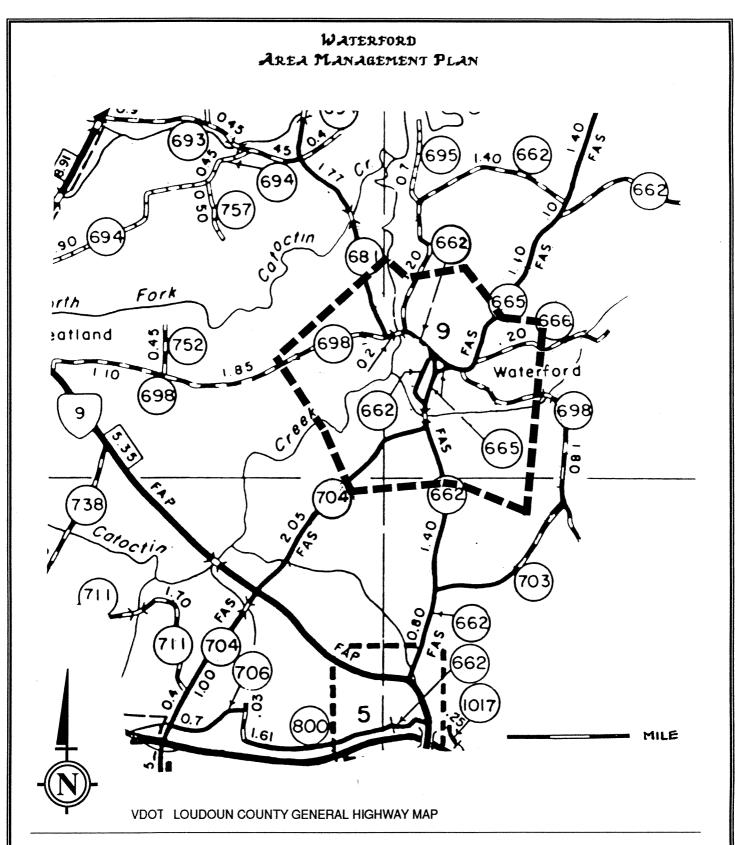
The overall goal for the transportation system in rural Loudoun is to provide a safe and efficient road network that meets the travel needs of its users. These needs include movement of agricultural products and machinery, work trips, commercial and recreation services, school trips and regional needs of through travelers and tourists. The road network was created over the last two hundred years to serve the needs of farms, towns, and villages.

In the case of Waterford, the village was once a commercial center serving the surrounding agricultural areas. Because of this function, early roads in the area were built as spokes feeding into the village as the hub. Over time, this commercial function faded and now the village and its surrounding countryside are included on the Virginia Landmarks Register and the National Register of Historic Places. Further, because of its value as a unique National Historical Resource, the village and its environs have been designated by the U.S. Secretary of the Interior as a National Historic Landmark. This is the most honorific recognition the Department of the Interior can bestow upon historic property.

The function of the village of Waterford has changed and its value to the heritage of Loudoun County and the State of Virginia is now immense. However, the regional road network around the village has not changed. All roads still lead to, and now through, the village. The village's location as a focal point of a regional road network and its prime role, now and in the future, as a historical resource are basically incompatible, since improvements which would expedite the flow of through traffic would significantly change the historic streetscape of Waterford, while attracting additional through traffic.

Figure 17, page 40 shows the existing road network, which exhibits a hub and spoke form, in and around Waterford and within the planning area.

New travel patterns on the old, but still existing, road network have resulted in growing numbers of vehicles going into and through the village. The current physical configurations of the streets are unable to efficiently or safely handle the resulting traffic volumes. Routes 662 and 665 in the village of Waterford (Main Street, Second Street and High Street) are now being used as connecting links between the central and northern portions of the County and points to the south and east. This disturbs and intrudes on the community and presents a safety hazard to motorists and pedestrians because of the narrow streets and lack of parking. To the extent that village roads must serve an increasing number of through trips, these problems will worsen. Thus, an important transportation issue is the appropriate handling of through trips.



EXISTING ROADS

FIGURE 17.

It is crucial to recognize that physical improvements to streets within the village cannot be the major solution to this problem. First, major scale improvements would, in all likelihood, be destructive of the historic and visual aspects of the village. Second, these improvements would result in through trips being squeezed into the village to the detriment of residents and businesses.

There is a critical need to rationally and efficiently realign the road network in the Waterford area to accomplish two objectives: (1) Preserve and enhance the village's role as a unique and irreplaceable historical and architectural resource, and (2) Provide an adequate transportation network for a substantial portion of Northern Loudoun County, focusing on appropriate higher speed roads for through trips

The <u>Rural Land Management Plan</u> recommends that the County should use the existing road network, to the maximum extent possible, to form the major elements of its future system as this will minimize disturbance to existing land uses and environmental and historic resources. This Waterford Plan reinforces that concept, which in the case of Waterford, means a selective number of new facilities should be linked to existing roads to modify the current hub and spoke alignment of Waterford area roads to a more rational regional system which can better serve through trips. This approach solves the transportation problems of the areas surrounding Waterford, at the same time as it protects the village and alleviates current traffic safety problems.

The Waterford Transportation Plan's recommendations also include internal service to the village's residents and visitors. The lack of sufficient parking is a problem which produces inconveniences for residents and could be a major constraint if the village decides to encourage tourism. Adequate off-street parking facilities, in conjunction with a safe amount of on-street parking on improved streets can alleviate this situation. The provision of a comprehensive system of sidewalks and pathways within the village can provide a viable and healthy alternative to short auto trips.

It is important that all selected road improvements within the village be designed and constructed in a manner that is sensitive to the village's character and streetscape and considers the existing locations of buildings, trees and other elements.

B. CURRENT AND PROJECTED TRAFFIC VOLUMES

Table 3, page 43 shows Average Daily Vehicle Trips (ADT) on local streets within the village and on regional roads to and from the community in the period 1978 - 1984. In addition, estimates have been made of vehicle trips for the year 2005. Two major patterns are evident from examining the data on Waterford area traffic volumes. First, the total amount of traffic on

routes from the North has been increasing substantially in the period 1978-1984. On a percentage basis, these increases include Rt. 681: +50%, Rt. 622: +108%, Rt. 665: +38%. Second, volumes on internal village streets and from the village to the south were basically stable during the period 1978-1982. This was probably accounted for by a decrease in locally generated trips during the period. If this is true, through trips were accounting for an increasing portion of the total trips. Second, the stable pattern for traffic volumes on internal streets and on Rt. 662 to the south ended in the period 1982-1984 and substantial growth was seen.

Apparently, both locally generated trips as well as through trips are now increasing in Waterford. If current trends continue we can expect to see increases of approximately 5% - 8% per year for the near future. This will exacerbate traffic problems in the village and increase the need for short-term physical improvements to the road system.

TABLE 3
TRAFFIC VOLUMES ON WATERFORD AREA ROADS

DAILY TRAFFIC (VDP)

ROUTE SEGMENT	<u>1978</u>	<u>1980</u>	<u>1982</u>	<u>1984</u>	<u>2005 (3)</u>
1. Rt. 665: Between Rts. 673/662 2. Rt. 665: Between Rts. 662/666 3. Rt. 665: Between Rts. 666/698 4. Rt. 665: Between Rts. 698/785 5. Rt. 665: Between Rts. 785/783H 6. Rt. 665: Between Rts. 783/806H 7. Rt. 665: Between Rts. 806/662H 8. Rt. 662: Between Rts. 703/704 9. Rt. 662: Between Rts. 704/665 10. Rt. 662: Between Rts. 665/806F 11. Rt. 662: Between Rts. 806/783S 12. Rt. 662: Between Rts. 783/698S 13. Rt. 662: Between Rts. 698/695 14. Rt. 681: Between Rts. 698/694 15. Rt. 698: Between Rts. 681/662 17. Rt. 662: Between Rts. 681/662 17. Rt. 662: Between Rts. 681/662 17. Rt. 662: Between Rts. 681/662 18. Rt. 783: Patrick Street	291 355 425 681 733 711 724 1,303	299 417 519 569 705 845 841 1,187 1,694 718 712 849 47 506 86 422 952 NCA	293 407 496 650 703 743 772 1,265 1,693 713 695	444 491 650 773 774 850 890 1,565 1,841 1,144 1,142 1,212 96 629 183 806 959 145	900 (1) 1,200 (2) 1,400 (2) 1,600 (2) 1,600 (2) 1,750 (2) 2,800 (1) 3,400 (2) 2,000 (2) 2,000 (2) 2,100 (2) 300 (2) 1,300 (2) 400 (2) 1,600 (2) 2,100 (2) 2,100 (2) 2,100 (2) 2,100 (2) 2,50 (2)
19. Rt. 785: Main Street 20. Rt. 698: Water Street	NCA NCA	NCA NCA	NCA NCA	131 213	250 (2) 400 (2)

- F. Factory Street
- (1) VDOT Estimate from "Rural Loudoun County Transportation Study"
- H. High Street
- M. Main Street
- (2) Loudoun Staff Estimate
 - (3) Assumes Route 287 Route 15 through Route not in Operation, volumes would be lower for many segments with the Route.

NCA No count available

Source:

VDOT Traffic Counts 1978 - 1984 Loudoun County Traffic Counts 1984

In the absence of new routes around Waterford, total daily traffic volumes on Waterford's streets are expected to approximately double by the year 2005. It is further expected that most of this increase will result from through traffic.

The current and projected traffic volumes on Waterford's roads would not normally be considered high for an area in which standard road improvements could or should be implemented, but Waterford's roads are as unique as the village itself. The roads are narrow; in many instances the distance between buildings on opposite sides of Main Street and Second Street is less than 45 feet, and when the distance between existing street trees is considered, there is often less than 25 feet. This leaves little room for roadway improvements.

C. RURAL PLAN CRITERIA

The <u>Rural Land Management Plan</u> lists ten factors which should be considered in designing specific road improvements and in assigning priorities between road segments competing for improvement funds. Because of the character of the village, the traffic safety and historic preservation factors have been combined for this plan. The factors are listed below in an order which responds to the village of Waterford's unique features.

- Correction of safety hazards (sight distances, curves, width, etc.); through physical and traffic management techniques which are consistent with and enhance preservation of historic and scenic areas.
- 2. Consistency with the <u>Resource Management Plan</u> and adopted area plans.
- 3. Development of an efficient unified highway network. (Connector roads that connect villages, towns and activity centers to primary roads.)
- 4. Roadway capacity.
- 5. Relationship to the County's existing economic growth and development policies.
- 6. Encouragement of growth in existing concentrations of population, industrial and commercial centers.
- Agricultural use of roads.
- 8. Ability to serve truck and commercial trips.
- 9. Ability to serve commuter work trips.

In the Waterford Historic Area, transportation improvements should focus on correcting safety hazards and preserving and maintaining historic and scenic areas. In addition, the improvements should directly relate to the

kind of tourism management policies and program, if any, the community decides to implement.

It is important to note that the order of these criteria change when viewed through the perspective of the commuter, the trucker, and the farmer. In their view the ability of the road network to serve commuter work trips, agricultural movements and truck and commercial trips becomes very desirable. Therefore, there is a basic dissonance in what is the optimal transportation solution for the internal village streets and the kind of performance characteristics through traffic would demand from these facilities. This reinforces the conclusion that it is not in the interest of either preserving Historic Waterford or in serving these external trip needs to attempt to funnel nonlocal traffic through the village. Instead, improvements to village streets should center on correction of safety hazards and preservation, while high performance roads outside the village are the more rational response to the travel needs of commuters and other through trips.

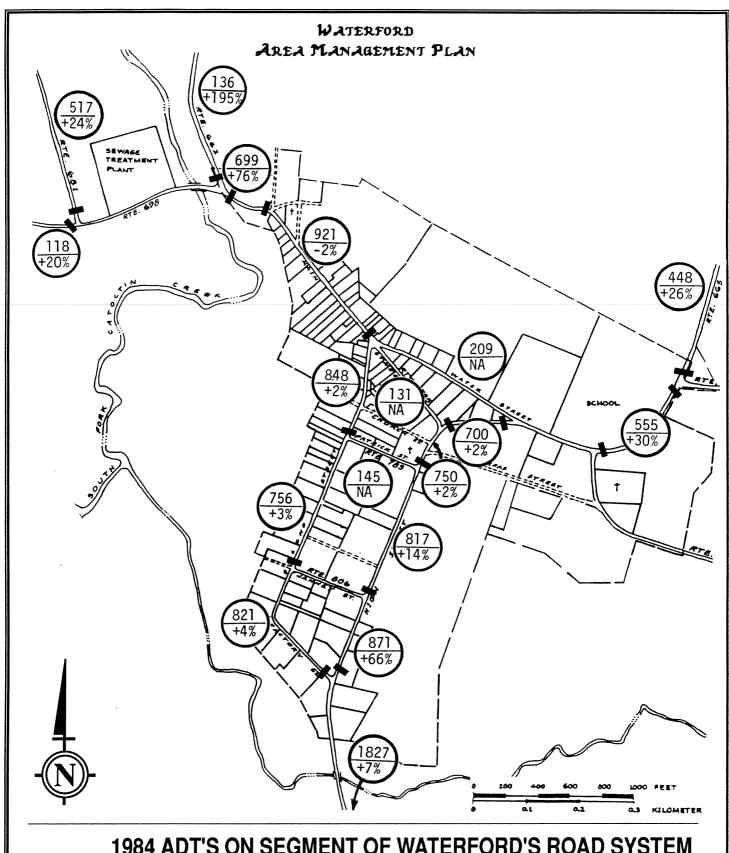
D. RECOMMENDED ROADWAY IMPROVEMENT PROGRAM

1. External Rural Roads

As can be seen from Figure 18, page 46, most of the round trips which pass through the village of Waterford originate from development north of the village (Routes 681 and 665). Many of these trips are probably destined for Leesburg, Eastern Loudoun County, Fairfax County and the Metropolitan Washington Regional Core. Improvements to upgrade Rt. 662 between Route 681 and Route 15 could intercept these trips north of Waterford and channel them to Route 15. These improvements would include upgrading Rt. 662 to a 2 lane (24 feet of pavement, shoulders, drainage) rural collector road. The majority of this road improvement would be along existing rights-of-way, with a small section of new right-of-way between Routes 695 and 681, and a small section east of Route 661.

The construction of this facility would provide a superior level of service for trips coming from a large area of northern Loudoun County while at the same time protecting our unique historical resource, the village of Waterford. The total length of this improvement would be approximately five miles. This improvement would also serve to protect Route 662 between Waterford and Route 9 and Route 698 between Waterford and Leesburg from large volumes of future traffic. It is noted that both of these road segments are resources of high aesthetic value to Loudoun County and that the Rural Land Management Plan states these roads should be designated as Virginia Byways (p. 184, RLMP adopted, November 5, 1984).

This improvement should be extended by improvements to Routes 681, 694, and 693. This would provide a new high



1984 ADT'S ON SEGMENT OF WATERFORD'S ROAD SYSTEM AND PRECENTAGE CHANGE FROM 1978 TO 1984

FIGURE 18.

performance facility between Route 287 and 15, and improve transportation for a large area of northern Loudoun County.

If additional trip pressure builds up in the future from areas west of Waterford, a new road segment could be constructed to the west of Waterford, running from the intersection of Route 662 extended/Route 681 to an appropriate intersection with Route 704.

The proposed system of external road improvements is shown in Figure 19, page 48.

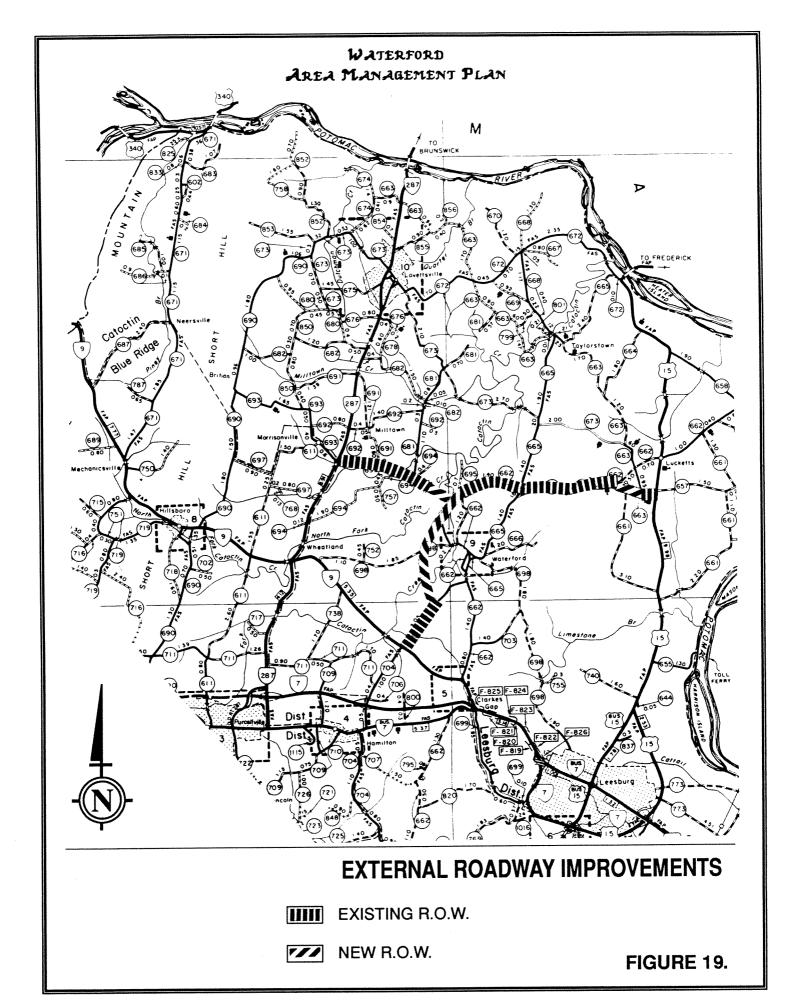
It is recommended that a more detailed study of the proposed Route 662 improvement be quickly implemented by the County and VDOT. Since the route crosses the Catoctin Mountains, there will be instances where curves need to be smoothed and grades addressed in order to provide an adequate road. Assuming these efforts reaffirm the engineering viability of the improvement, funds to begin its implementation should be identified within the Six-Year Secondary Road Construction Program at the earliest feasible date. Another important part of this effort will be the determination of the cost of the improvement and an estimate of its completion time, given current resource limitations within the Six-Year Program.

At points leading into Waterford from these new and upgraded facilities, appropriate signage should be installed noting that the roads to the village are for local traffic only and that through traffic should use the appropriate through routes. In addition, appropriate speed limits could be implemented on the local roads to Waterford to make the through roads an even more attractive path for through trips. In the construction of these external road improvements, extreme care should be exercised in protecting agricultural operations and making sure the roads are compatible with the existing landscape.

2. <u>Internal Village Roads</u>

Road improvements in the village of Waterford will be strongly influenced by the narrowness of current roads, the short distances between facing buildings and/or property lines, and the presence of a significant number of medium to large size trees which could be imperiled by construction projects. On Main Street between the Mill and Second Street, for example, facing buildings are sometimes within 45 feet of each other.

Along with the implementation of appropriate improvements for these streets, a number of transportation system amenities, including coordinated on-street/off-street parking, and pedestrian pathway/sidewalk elements need to be considered.



There is currently a need for a variety of selected improvements to Main Street, Second Street and High Street because of the current deteriorating physical conditions of these roads. However, these improvements should be totally compatible with the existing historic streetscape of Waterford and should focus on improving traffic safety, and not moving large numbers of vehicles, including through traffic. It would be inappropriate to attempt to jam a typical street section, which might be suitable for more modern kinds of development, through the heart of historic Waterford.

For example, the complete reconstruction of streets with a 30 foot street section, curb and gutter plus sidewalks, such as exists in downtown Leesburg, would significantly alter the historic visual quality of the village. It would also probably result in the removal of a significant number of beautiful old trees with are so vital to the village's streetscape.

Instead, a coordinated program of selected improvements should be implemented. These would include:

- Lowering of street crowns where necessary.
- o Repairs to the edge of pavement and elimination of dangerous drops between the edge of pavement and adjoining "shoulders".
- o Regrading where needed.
- o Selective widening of pavement to accommodate appropriate on-street parking.
- Necessary drainage improvements.
- O Use of street surfacing materials appropriate to the historic visual aspects of the village.

These improvements should strive to provide two lanes for moving traffic at speeds compatible with safety and one lane (or area) for on-street parking. A serious safety problem exists at the point where Rt. 662 (Main Street) comes within a few feet of the exposed and unprotected edge of the Old Mill. At this point, going eastbound into the village, the road bends from a shallow left curve into a very sharp right curve with the edge of the pavement narrowly avoiding the Mill. For safety reasons, it is recommended that the road be appropriately widened and the two curves be smoothed with the objective of gaining a substantial increase in sight distance. The mitigation of adverse impacts to the property along the north side of the road will be a limiting factor in the amount of curve straightening and pavement widening which can be accomplished.

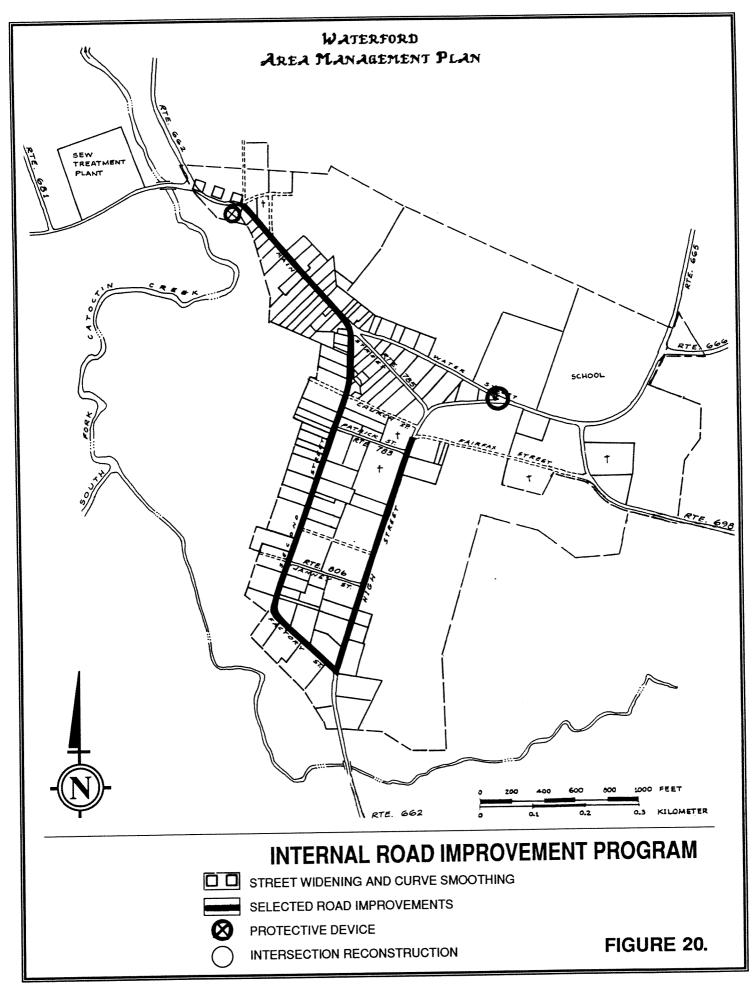
An appropriate protective device is also required to shield the exposed edge of the Mill. More conventional devices such as guard rails or heavy posts would be visually incongruent with the area or unsafe to motorists. However, innovative approaches, such as sand barrels housed in a historically appropriate low profile breakaway structure, may provide safety for motorists and the Mill while being consistent with the character of the area. An additional stop sign or signs should also be considered in the vicinity of this site.

It is recommended that the intersection for Butcher's Row and Water Street be reconstructed to alleviate the current sever interaction angle. An innovative approach should receive appropriate consideration for this intersection.

Figure 20, page 51 shows the recommended Internal Road Improvement Programs. It includes improvements to Route 662 south of Waterford and Route 698 toward Leesburg, consistent with their scenic character.

<u>Traffic Safety</u>. A frequent complaint within the village is the excessive speeds of vehicles passing through Waterford. Posting of speed limit signs has not deterred this highly unsafe practice. A combination of measures is suggested to bring this problem under control. It is recommended that traffic safety personnel from VDOT conduct a comprehensive traffic safety study to determine which measures will be most effective in curbing speeding while being compatible with the historic nature of the village. Among the measures which could prove effective are:

- o Installation of new stop signs at strategic locations within the village.
- Warning signs against speeding on approach roads to the village.
- o Street surfacing material (such as cobblestones) which deters high speed driving.



Increased traffic law enforcement in village.

Other measures could be suggested through a traffic safety study.

E. SIDEWALKS AND PATHWAYS

A system of sidewalks should be developed in coordination with the road improvements. These sidewalks should be constructed using materials appropriate to Waterford's historic atmosphere. At present some sidewalks of various widths and materials exist on a lot by lot basis and in conditions of maintenance varying from adequate to poor. The differing physical appearance and condition of existing sidewalks adds to the visual aspects of the village, but also functions as a barrier to pedestrian trips.

There is a need for a coordinated walkway/path system in the village to serve residents, school children and visitors. Currently children are bused to the elementary school from short distances within the village, and there are numerous places where pedestrians must share the streets with vehicles; this is a potentially hazardous situation, particularly along Main and Second Streets.

Responsibility for the construction of sidewalks could be taken by VDOT or the local community, or shared between the two entities. Innovative widths and mixtures of materials such as flagstones, exposed aggregated, sand-laid bricks or cobblestones should be used in keeping with the streetscape of the village.

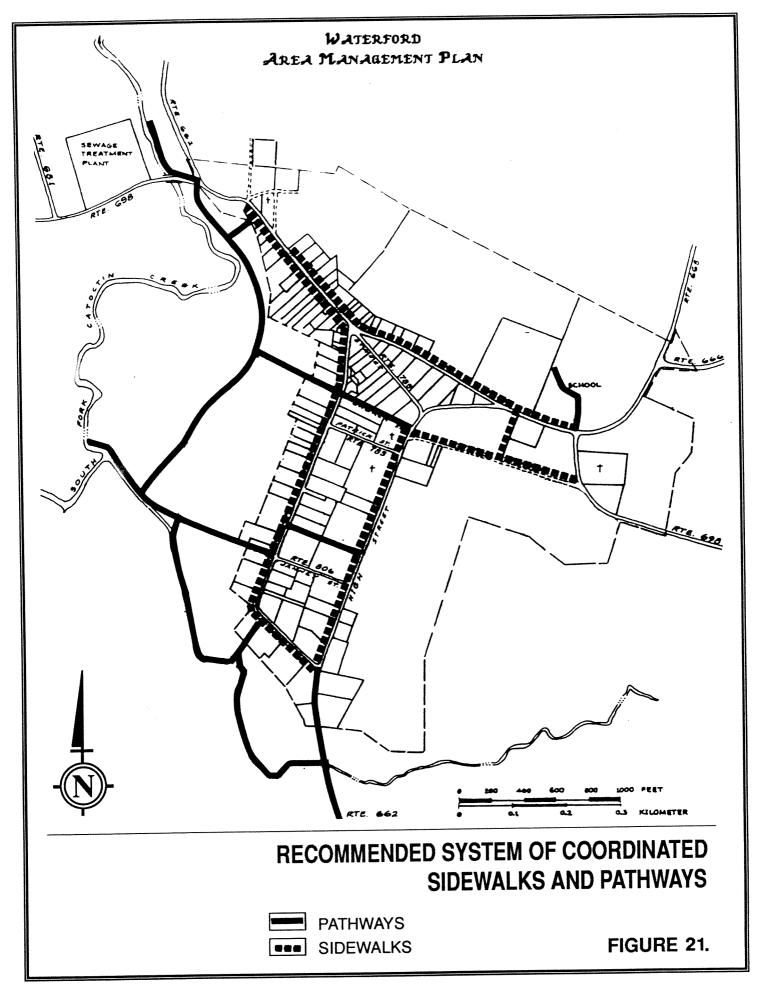
The local community, through the Waterford Foundation should coordinate detailed planning for appropriate sidewalk sections in conjunction with detailed County/VDOT planning for the selected road improvements.

In Waterford it would be desirable for electric and telephone utility lines to be buried in conjunction with road improvements.

Sidewalk improvements should be coordinated with a system of connecting pathways.

Walking within the village of Waterford is preferred by most residents because of its small size, lack of parking for cars and social contact. Walking is difficult in many areas of the village because of lack of sidewalks or road shoulders, or because of broken and deteriorated existing sidewalks.

Figure 21, page 53 shows a recommended system of coordinated sidewalks and pathways. As previously discussed these facilities can be constructed using a variety of building materials which are consistent with the historical and visual aspects of the village, pedestrian safety, and convenience and maintenance requirements and costs. This recommended



system includes a pathway along the west side of Rt. 662 extending south to the community pool.

The construction of this system, with any modifications required by the community, will eliminate the need for a car on many short trips within the village. It is also a way of linking the developed portions of the village with the natural amenities of the surrounding countryside.

F. PARKING IMPROVEMENT PROGRAM

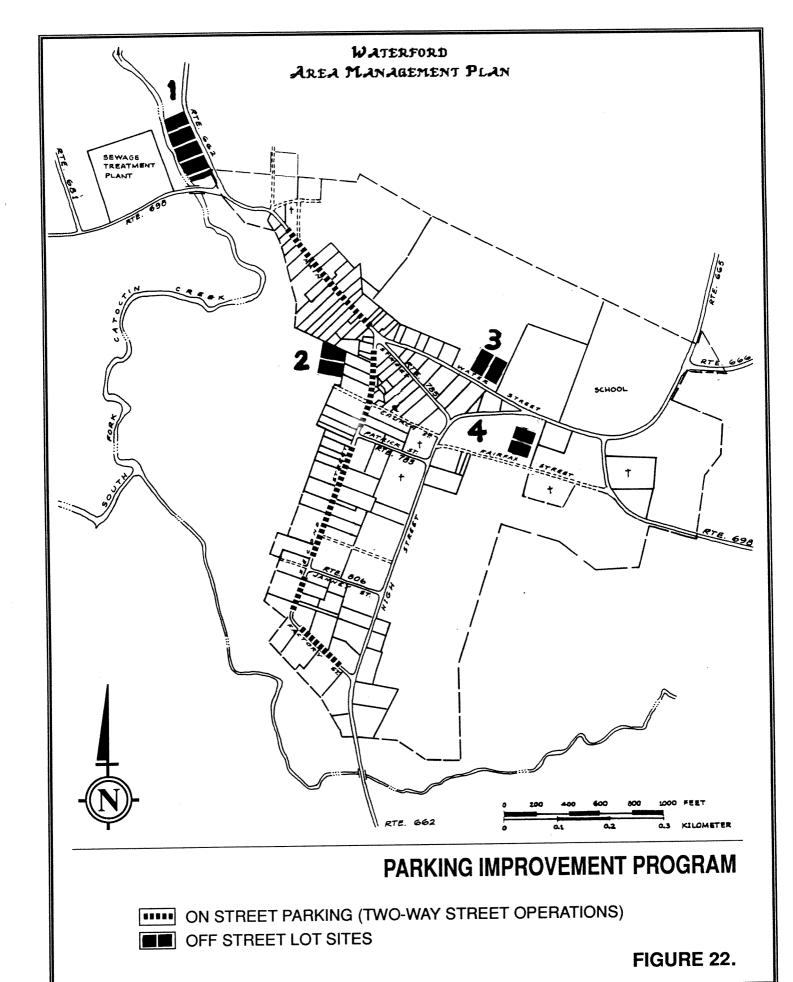
There is currently a shortage of adequate on-street and off-street parking spaces in the village. On-street parking along Main street and Second street is often along both sides of the narrow roads, and at times the two lane roads can be encumbered to the extent that only one lane of traffic is serviceable. To complicate the situation there is a virtual absence of off-street parking in the existing Main Street/Second Street commercial area.

Assuming the construction of the selected street improvements with one lane of on-street parking on Main, Second and Factory Streets, it is estimated a maximum of 80-90 on-street spaces could be provided. The need to preserve trees, which are important to the streetscape of the village, could reduce this supply of on-street spaces.

The recommended Rural Village Commercial Zone may contain approximately 25,000 square feet of retail commercial space. This land use could require up to 135 parking spaces. This demand could not be handled by on-street spaces. Added to the retail/commercial demand is the need for resident parking and tourist parking. On-street parking on Second Street should be primarily used to serve residents. On Main Street some short-term on-street parking will be needed for retail/commercial/service purposes with the balance used for residential and tourist parking.

Considering commercial, residential, and tourist demand, there is an estimated aggregate 1995 demand for approximately 250 total parking spaces in the Main Street/north Second Street area. Depending on the relationship between tree preservation and on-street spaces, there is a potential supply of 30-50 on-street spaces. Therefore, there is a potential need for up to 150 off-street parking spaces in this area.

One mechanism to provide off-street spaces is to require that they be provided at the time of development or redevelopment. This technique would work well in the undeveloped eastern portion of the village or if any development should occur in the southern portion of the village. However, in the Main Street/north Second Street area, provision of spaces contiguous to the development may be impossible since it would require the removal of a historic structure or be incompatible with the overall character of the village. Therefore, a system of community off-street parking lots is



recommended. Possible locations for these lots are shown in Figure 22, page 55. The possible capacities for these lots are also shown in Table 4.

TABLE 4 POSSIBLE OFF-STREET PARKING LOT SITES

1.	Northwest Lot Between Route 662 and Catoctin Creek	40 - 70 Cars 2 - 4 Buses Tourist Oriented Lot
2.	Post Office Lot South of the Rural Village Commercial Area	10 - 20 Cars Commercial Oriented
3.	Water Street Lot North of Water Street	10 - 20 Cars
4.	Northeast Lot On old school lot north	20 - 60 Cars 1 - 2 Buses
	TOTAL SPACES	80 - 170 Cars 3 - 6 Buses

Construction of these lots could be the responsibility of the local community or joint County/Community projects. This plan recommends that the County Zoning Ordinance be amended so new and expanded commercial development would have the option to either provide on-site/off-street parking or contribute to the construction/maintenance of off-site community/public parking lots which can reasonably serve such development.

It is crucial that the lots be constructed with designs, materials and screening/buffering, appropriate to historic Waterford. In the case of some facilities it could be appropriate to waive dust-free surface paving requirements provided that the ultimate surface was visually compatible with the village and subject to adequate maintenance.

G. PUBLIC TRANSPORTATION

The viability of public transportation services for Waterford are limited by the small size of the village. However, a community oriented shared ride program focusing on carpools and vanpools could be effective. This program could be primarily operated by the Waterford Citizens Association with assistance from the County and State and the Metropolitan Washington Council of Governments (COG). A locally operated volunteer driver program

could provide service for mobility impaired citizens and along with the carpool/vanpool program serve to strengthen community bonds and spirit.

If tourist demand exceeds the amount of parking which can reasonably be provided in the village, a shuttle bus could operate to the village from an outlying parking area or from Leesburg. Such service might be seasonable or only operate on weekends. Depending on the frequency and structure of the service, it could be used by local residents needing to travel to Leesburg without interfering with the shuttle's primarily tourist clientele.

IV. <u>ENVIRONMENT</u>

A. INVENTORY OF NATURAL FEATURES

The Waterford area has many of the characteristic natural environmental features found throughout the western portion of the County that provide tangible and intangible benefits such as clean air and water, scenic beauty and economic return.

1. Water/Hydrology

Waterford is located within a six square mile drainage basin of the 61 square mile Upper Catoctin Watershed. Catoctin Creek is a state designated Scenic River and a dominant physical feature in the area. The planning area has 336 acres of land within the 100 year floodplain which is 23% of the total land area.

Topography

The area is part of the Catoctin Valley and has a rolling landscape character with alternating valleys and fairly steep hills. Elevations range from 350 feet (above sea level) to 650 feet. There are approximately 160 acres of steep slopes greater than 15%, which is 11% of the total planning area. About 60 acres of this 160 are greater than 25%.

3. Geology/Soil

Waterford is within the upland Piedmont physiographic province that is underlain by gneiss, schist and greenstone, all very hard rocks that are generally low in water yield, resulting in an unreliable supply of groundwater.

Soils differ according to elevation and underlying geologic formation and have varying suitabilities for agriculture, building and road construction, and septic systems. A general classification system developed by the County Department of Natural Resources yields the following information:

- a. Good potential for septic systems = 352 acres (24% of total planning area).
- b. Prime Farmland* = 320 acres (22% of total planning area). In many cases, these two soil categories overlap.

4. <u>Vegetation</u>

The approximately 165 acres of woodland (11% of total planning area) are found mostly along watercourses, on steep slopes and in hedgerows, as most of the land is actively farmed. Predominant species include oak, hickory and tulip poplar in upland areas and sycamore, maple, willow, river birch and sweetgum along creeks and streams.

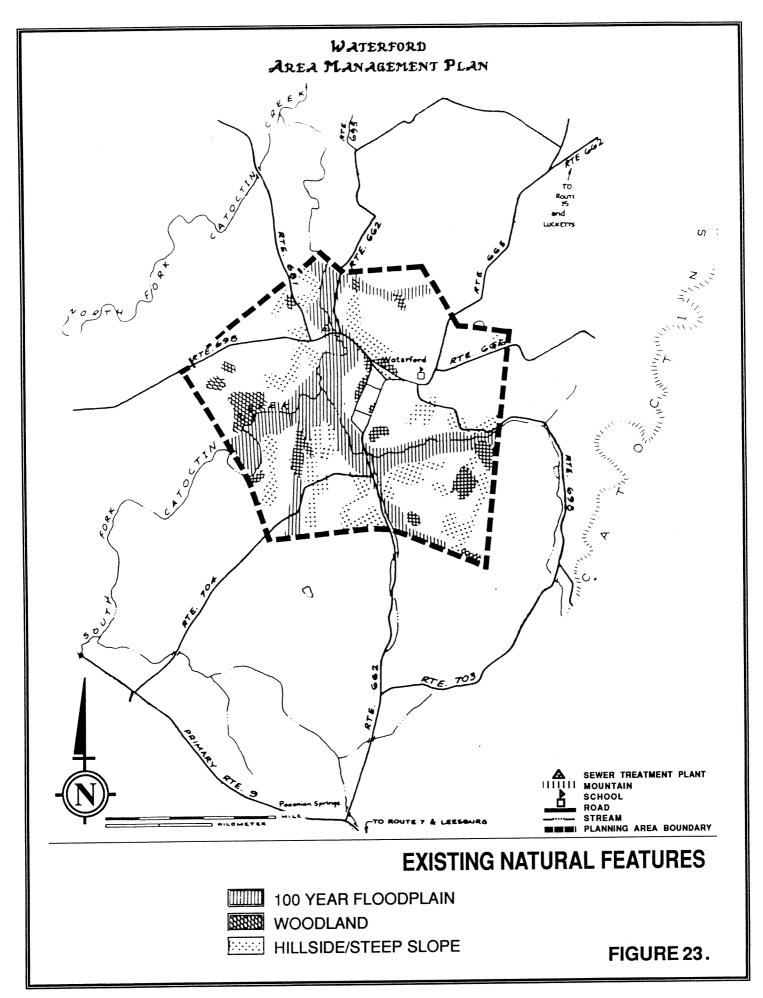
Figure 23, page 59 illustrates the approximate location of the area's existing natural features described above.

B. ANALYSIS OF ENVIRONMENTAL RESOURCES

The two-fold purpose for proper management of environmental resources is to protect the public from potential natural hazards, such as flooding or slope failure and to enhance the positive economic and aesthetic benefits of a resource, such as the soil holding and visual qualities of woodlands.

In the Waterford area, as with most of rural, agricultural Loudoun County, man's activities have achieved a relative state of balance over the past 200 years because farmers, to be successful, must understand and properly manage the land and water resources. This does not mean that farming activities do not cause environmental problems such as soil erosion and water pollution from fertilizer and pesticide use, but it should be recognized that, in general, farming has a much smaller negative impact than development on the following natural resources:

Defined by the County Department of Natural Resources as soil types which generally have high inherent fertility, good water holding capacity and deep rooting zones, are not subject to periodic flooding and have an estimated potential corn yield average greater then 125 bushels per acre.



o Water:

Due to minimal impervious surfaces, farming reduces flooding and storm runoff and maintains natural stream flow and groundwater recharge, thus protecting existing and potential surface and ground water supplies.*

o Soil:

On the average, erosion from farmland produces 500 ons of sediment per square mile per year while development activity yields from 10,000 to 100,000 tons of sediment per square mile per year.**

o Air:

- Agricultural land use results in less auto travel than suburban development, therefore, greatly reducing a potential source of air pollution;
- 2) Open areas, such as farmland, provide an important source of clean air that helps to reduce regional air pollution.
- o Vegetation:

In developed areas large contiguous tracts of woodlands, along with their associated benefits, are greatly diminished, while rural agricultural areas such as Loudoun still have large sections of forests and woodland. For example, approximately 23% of Fairfax County's land area is forested (61,378 acres)*** while about 30% of Loudoun is in woodland cover (99,052).****

- * <u>Urban Hydrology for Small Watersheds</u>, Technical Release No. 55 Engineering Division Soil Conservation Service, USDA, January 1975, Table 202, page 2-5.
- ** <u>Water Resources Protection Technology</u>, J.T. Tourbier and R. Westmacott, Urban Land Institute, 1981, Figure 5, page 5.
- *** <u>Environmental Reporting System</u> 1982 Technical Report, Fairfax County Office of Comprehensive Planning, September 1982, pages 20 and 25.
- ** Natural Resource Inventory of Loudoun County, Loudoun Soil and Water Conservation District, 1981, page 8.

The potential health hazard posed by failing septic systems in the village is an additional environmental issue that should be addressed separately. A recent Health Department survey did not find any individual systems producing above ground pollution, but it can be assumed that the private waste disposal systems in the village built prior to Health Department permit procedures (such as pit privies and cesspools) and the close proximity of wells to septic systems due to the relatively high density of the village could result in a groundwater pollution problem. The sewage treatment plant was built to solve this problem, and until all existing homes are connected (only about 50% are at present), there will continue to be a potential health hazard in the community (see Public Facilities section for additional discussion).

Overlay Policy Area for managing the environment of rural Loudoun County. As the Waterford Plan is included within the Rural Plan's study area, it is appropriate for this plan to refer to the Rural Plan when making environmentally related land use decisions.

The Rural Plan's basic approach within this Overlay Policy Area is to restrict use activities in certain environmental areas, such as floodplains and steep slopes, to protect public safety and private property and to offer incentives for the protection of valuable resources, such as certain woodlands or unique natural areas.

o Wildlife:

Wildlife habitats are permanently altered and reduced in size in urban/suburban areas while Loudoun's agricultural areas contain numerous open fields, pasture land, natural water courses, forested areas and edges between field and woodland that provide necessary cover and food for fish and wildlife species.

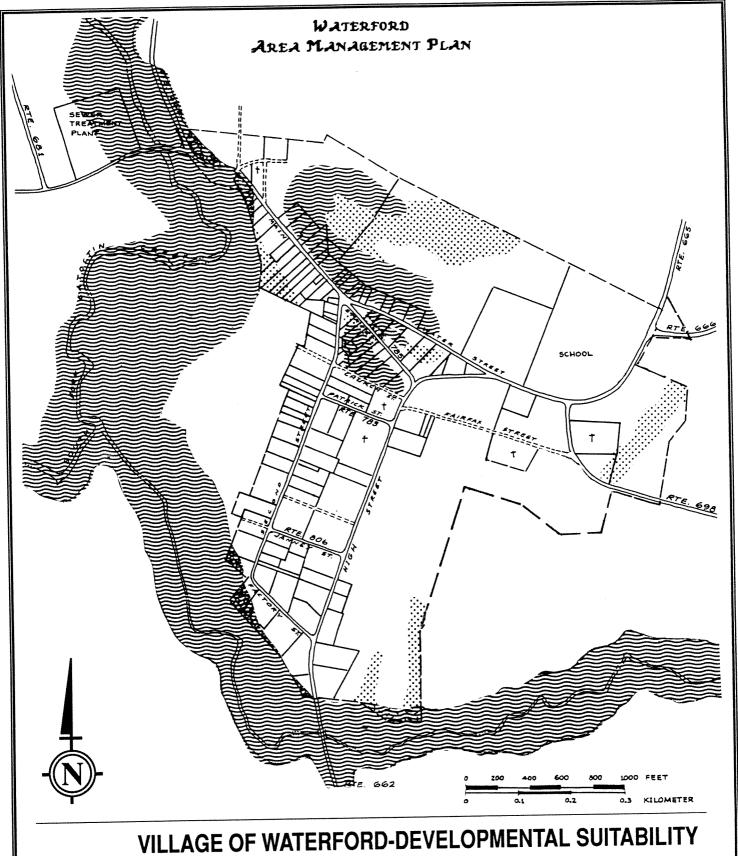
The key to managing the Waterford area's natural environment is to ensure that future changes in land use, both in the village and the surrounding rural, agricultural area do not significantly alter the water resources, landforms and existing woodlands. This is especially important as the natural environment provides much of the setting that makes the Waterford area a unique historic and scenic resource. The Rural Land Management Plan has examined rural environmental issues in extensive detail and recommends an Environmental

Figures 24 and 25, pages 62, 63 indicate general development suitability based on the constraints posed by the existing environmental conditions for both the planning area and the village.

V. <u>HISTORIC AND SCENIC RESOURCES</u>

Waterford was settled in 1733 by Quakers who migrated from Pennsylvania. The village quickly became a commercial center for the surrounding rich and productive farmland. It remained fairly prosperous throughout the 18th and early 19th centuries, at one time rivalling Leesburg as a trade and market center, but the effects of the Civil War and the post-war construction of the railroad, which bypassed Waterford, led to the village's isolation and gradual decline as a commercial center.

The village of Waterford and its environs represent an outstanding collection of examples of Loudoun County's architectural history with particular emphasis on the first half of the nineteenth century. Over time, the buildings from different periods have responded to the natural landforms and each other to form a unified village character. Each building was constructed individually, generally using locally obtained materials, and reflected the taste and concern of the owner or builder. The Quaker and Tidewater architectural styles, both of which are found in other parts of the County, are also located in the planning area.



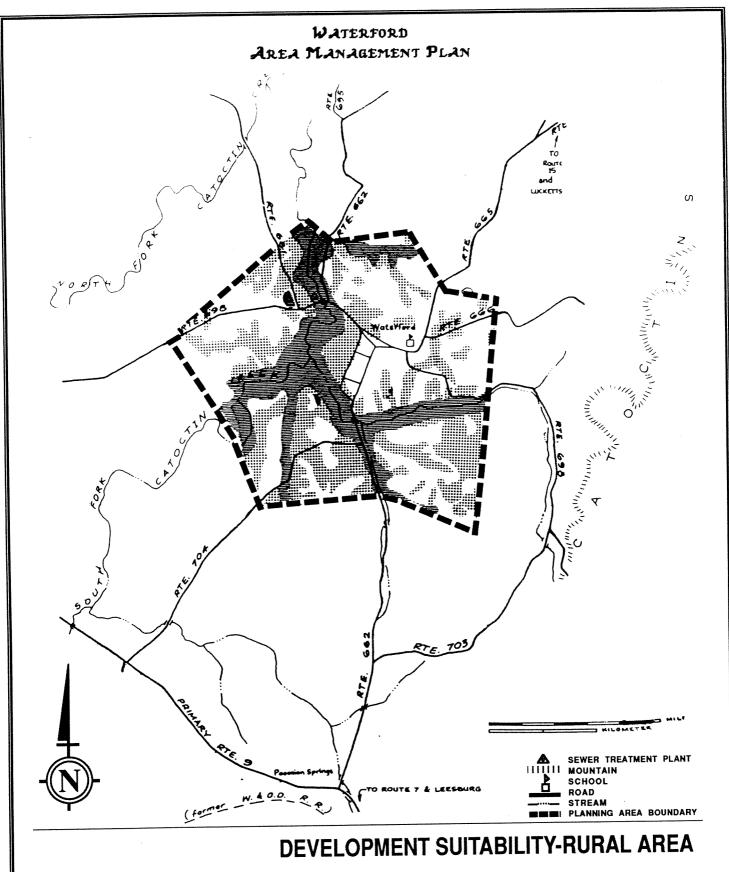


AREAS WITH SEVERE LIMITATIONS FOR DEVELOPMENT (100 YEAR FLOODPLAIN, SLOPES > 25%)

AREAS SUITABLE FOR DEVELOPMENT WITH SPECIAL STANDARDS

(CLASS IV SOIL, SLOPES 15% TO 25%) AREAS GENERALLY SUITABLE FOR DEVELOPMENT (NO SIGNIFICANT ENVIRONMENTAL LIMITATIONS)

FIGURE 24.





AREAS WITH SEVERE LIMITATIONS FOR DEVELOPMENT (100 YEAR FLOODPLAIN, SLOPES > 25%) AREAS SUITABLE FOR DEVELOPMENT WITH SPECIAL STANDARDS

(CLASS IV SOIL, SLOPES 15% TO 25%)

AREAS GENERALLY SUITABLE FOR DEVELOPMENT (NO SIGNIFICANT ENVIRONMENTAL LIMITATIONS)

FIGURE 25.

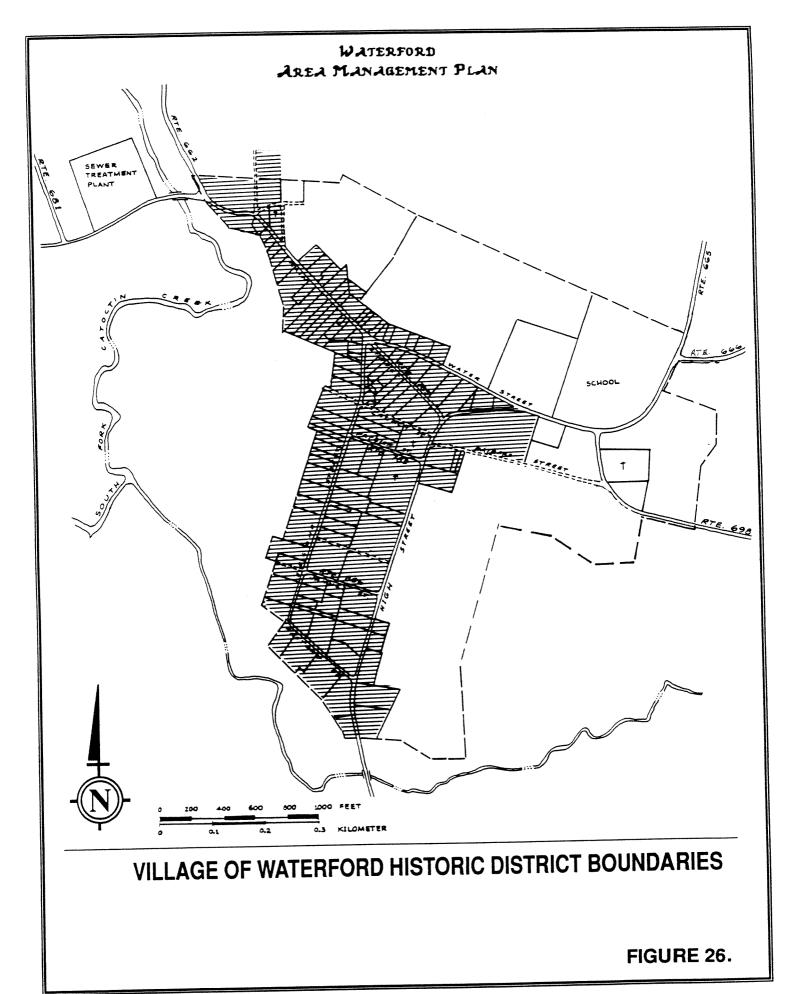
The village provides an important cultural link with the past because of the variety of carefully crafted buildings and overall historic character. It is also a pleasant place to live because of its human scale, proximity to the countryside and small town, 19th century charm.

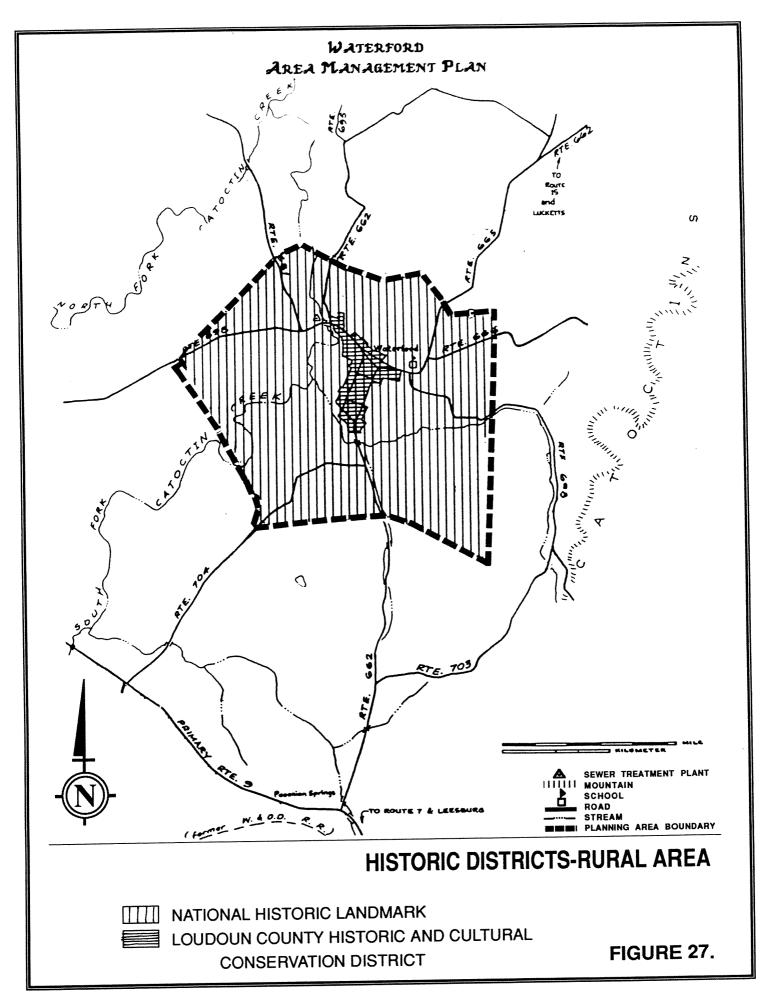
The Waterford Historic District (the village and approximately 1450 acres) was placed on the Virginia Landmarks Register and the National Register of Historic Places in 1969 and was chosen to be a National Historic Landmark District in Only 5% of the more than 27,000 National Register listings are also designated as Natural Historic Landmarks. The key element of the landmark designation is the integral visual relationship between Waterford and the surrounding rural landscape; in particular the clear distinction between the village with its hard edge, and the open land around it. The village is also a part of the County Historic Cultural and Conservation Overlay Zoning District. Implementation Recommendations and glossary for further explanation of Historic District Zoning.) The boundaries of the approximately 1,450 acre National Historic Landmark extend to the first major ridgeline around Waterford and were determined by a visual and topographic assessment of what could be readily seen from the village. (Figures 26, and 27, pages 65, 66) indicate the existing boundaries of these two historic designations. (See glossary for explanation of National Historic Designations.)

All structures in the village have been architecturally surveyed by the Virginia Historic Landmarks Commission and ten structures in the planning area outside the village have been similarly documented. Forty-four major structures in the village and all of the outbuildings associated with them have been protected with facade easements donated to the Virginia Historic Landmarks Commission, the Virginia Outdoors Foundation, or the National Trust for Historic Preservation. (Figure 31, page 64)

Closely related to Waterford's unique historic character is its setting. The dense, relatively urban form of the village has a sharply defined edge and is visually distinct from the surrounding countryside of open fields, steep hillsides, woodlands, farm related activities and buildings. Catoctin Creek is a dominant visual element in the area and was designated a State Scenic River in 1977**. From the village there are attractive views of the surrounding hilltops, side slopes and valleys and reciprocally, some of these locations offer outstanding views of Waterford. There are also numerous vistas of the area from vantage points along nearby roads, such as the south entry to the village along the Waterford corridor (Route 662), along Route 698 east and west of Waterford and from points on Route 681 and Route 704.

- * There are Four National Landmark sites in the County: Oak Hill, Oatlands, and Balls Bluff as well as The Waterford district.
- Catoctin Creek Scenic Rivers Designation Senate Bill No. 627; Scenic Rivers Act. Title 10, Chapter 15, Section 10-167 to 10-175.





One of the tasks of the <u>Waterford Area Management Plan</u> is to incorporate the community's historic and scenic resources in the overall comprehensive land use plan. Along with the rarity of the National Historic Landmark designation, an unusual set of circumstances contributes to the community's unique and scenic character and defines what Waterford is:

a. Physical Development in Response to Natural Setting:

The area's environment determined the siting and shape of the village. The first section was developed next to Catoctin Creek (for water power) and was flanked by the steep hills to the east. Later, the village spread south and east parallel to the creek and up the steep hills. Early buildings were placed right on the street without setbacks and were tall because of the hill behind them while lots toward the creek were long and narrow. This diversity was based on the settler's response to the natural setting and is an identifying characteristic repeated throughout the village.

b. Cessation of Growth and Distinct Edge Between Village and Countryside:

Due primarily to a lack of growth and development after initial subdivision in the early 1800's and the continuing use of the surrounding land for agriculture, Waterford has retained the same setting and not increased in physical size for over 150 years. The importance of the area's scenic resources is due to the rarity of the sharply defined edge of the village and its location within an open, rural countryside. For almost 200 years, Waterford served the surrounding agricultural community as a commercial and cultural center; the fact that this is no longer the case does not diminish the physical and visual relationship for purposes of historic interpretation. The sharp edge between the architecture of the village and the open lands adjacent is a feature which is not found in more modern settlements. This relationship between the sharply defined village and its virtually undeveloped setting was a central factor in the designation of the Waterford Historic District as a National Historic Landmark.

c. Diversity of Architecture:

The village architecture is not typical of a single period in the 18th or 19th century, but a mixture of many different styles, including Greek Revival, Georgian, Federal, Gothic Revival, Queen Anne, Italianate and vernacular cottages of log, frame or brick.

d. Private Rehabilitation Efforts:

It is remarkable that the entire village has continued to maintain its scale and architectural character considering that most of the buildings in the village have been privately rehabilitated by many different individuals over a 40 year period without benefit of an overall management program.

The Waterford Foundation has played an integral part in this work by purchasing and restoring many community buildings, such as the mill and the old school.

e. Living Community:

Unlike many "historic villages" such as Williamsburg, Waterford is not like and has never been a museum or a period restoration. It is a modern day community of 210 people who live a 20th century life style in a community that still has many of the charms and physical qualities that were characteristic of the 19th century small towns in America.

f. Existing Tourism:

Waterford is one of the leading tourist attractions in Loudoun County and the annual three day fair is a major regional event.

Following this general analysis of Waterford's historic and scenic resources is a detailed analysis broken down into Architectural Design and Scenic Resources.

A. ARCHITECTURAL DESIGN

The buildings in and around Waterford represent many different architectural styles from the 18th and 19th centuries. The factors that give the village its overall design quality are its human scale, the handcrafting and attention to detail evident in the structures, and the variety and diversity of lots, buildings and streetscapes that together produce a unity of place, the major elements of which are described below:

- 1. Height Most of the houses are two story with some that are two and a half or three stories on the northeast side of Main Street.
- 2. Materials Predominantly brick and frame.
- 3. Roofs In the village, setbacks are consistent within small areas or along specific streets. Buildings are oriented to the streets, are centered on the lot frontage and have responded to the varied topography. In the rural areas, buildings are clustered, sited on the side of a slope for protection from inclement weather and surrounded by big shade trees to modify summer heat. Most are gabled, covered originally with wood shingles; many are now metal for fire protection.
- 4. Siting In the village, setbacks are consistent within small areas or along specific streets. Buildings are oriented to the streets, are centered on the lot

oriented to the streets, are centered on the lot frontage and have responded to the varied topography. In the rural areas, buildings are clustered, sited on the side of a slope for protection from inclement weather and surrounded by big shade trees to modify summer heat.

5. Townscape -

The village streets were laid out in a basic grid pattern that appears irregular because it is superimposed on the steep slopes. Streets continue as roads out of the village or dead end at the sharply defined edge of the village. Lots are relatively similar in size, but vary in shape. There is a large variety of building sizes and styles whose central placement on the lots gives the streets an orderly rhythm of alternating solids and spaces.

6. Rural -Landscape The natural environment dominates the built environment, while retaining a sense of harmony between the two.

B. SCENIC RESOURCES

In assessing Waterford's scenic resources, the standards issued by the Department of the Interior for National Historic Landmarks provide an initial framework:

"Continuing integrity is essential in maintaining the quality of national significance . . . An adverse effect on the integrity of a Landmark, whether due to an action of the owner or to circumstances beyond his control, can constitute cause for withdrawal of the designation, the plaque, and the certificate . . . Generally, adverse effect occurs under conditions which include, but are not limited to:

- Destruction or alteration of all or part of the property;
- o Isolation from, or alteration of, its surrounding environments;
- o Introduction of visual, audible, or atmospheric elements that are out of character with the property and its setting."*

^{* &}quot;The National Historic Landmarks Program", National Park Service, U.S. Department of the Interior, Washington, D.C.

This does not mean that the rural land around the village must retain the same land uses and appearance as this would be unfair to the people who own the land and unrealistic in terms of the changing nature of Loudoun County. It does mean, however, that if and when changes occur within this area, (from farming to residential land use, for example) that the essential scenic and historic character of the 1,450 acre Waterford National Historic Landmark should be maintained. Retention of the distinct visual separation between the village and the surrounding rural landscape is of particular importance.

Visual assessment is a relatively new field of study and unlike other aspects of planning analysis, is difficult to perform due to its inherent subjectivity and lack of quantifiable standards.

Most of the detailed research and work in what is referred to as Visual Resource Management (VRM)* has been performed by specialists in the academic community, private consultants in disciplines such as landscape architecture or natural resource management and federal agencies with large land holdings in the western U.S., such as the Forest Service, Bureau of Land Management (BLM) or the Soil Conservation Service (SCS). These agencies all began Visual Resource Management studies in response to the requirements of the Federal Land Policy and Management Act of 1976 (PL 94-579).

Some of these studies** have developed general concepts and guidelines on scenic assessment and Visual Resource Management for use on federally owned land to determine the impacts of large scale development projects and can be of assistance in understanding the visual and scenic quality of any given area or the possible effects of a proposed land use change, such as those that may occur in the Waterford area.

- Defined as: "The management of the 'seen' aspects of both the land and the activities which occur upon it the administration of the land's scenic or aesthetic attributes." (Source #3 listed below, p. 3)
 - 1) Our National Landscape, Proceedings of a Conference on Applied Techniques for Analysis and Management of the Visual Resource, U.S. Forest Service, 1979.
 - "Procedure to Establish Priorities in Landscape Architecture", Technical Release No. 65, USDA, Soil Conservation Service, Engineering Division, Washington, D.C., October 1978.
 - "Visual Resource Management", Edward H. Stone, American Society of Landscape Architects, Landscape Architecture Technical Information Series, Volume 1, No. 2, 1978.

The following is a proposed Visual Resource Management method for the Waterford planning area:

1. <u>Inventory of Scenic Resources</u>

The inventory procedure provides an overview of an area's major visual image and has three stages beginning with the natural environmental setting of an area and proceeding to an examination of how man has adapted to this natural landscape:

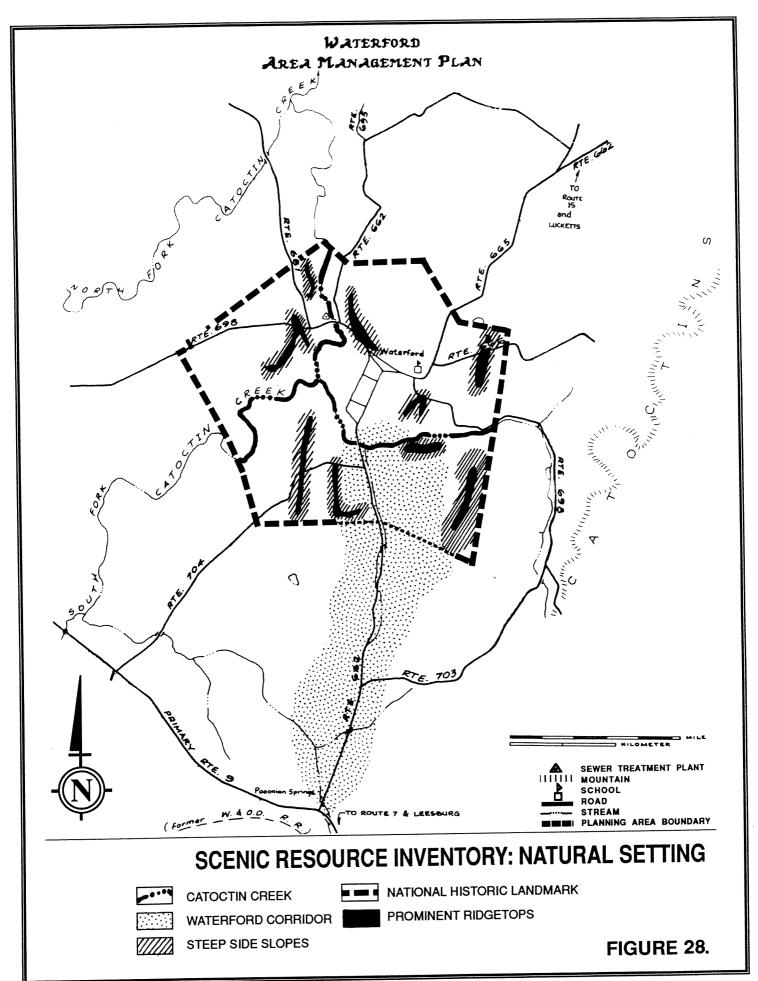
This portion of Route 662, known as the Waterford Corridor, is the most heavily travelled entry to the village. The other major features of the area which comprise the natural setting include Catoctin Creek and a rolling landscape of ridge tops, steep side slopes and open valleys. The boundary of the National Historic Landmark District is just beyond the first ridge line that surrounds the village as defined and adopted by the U.S. Department of Interior. (Figure 26, page 65). There are important, visually dominant elements in the natural setting. In Waterford, the natural setting begins at the junction of Routes 9 and 662 at the turn which heads north into a valley bounded and confined by tree lined ridges on both sides.

b. Manmade Adaptations:

The second step analyzes how man has both modified and adapted to the natural setting most notably by means of buildings, structures and roads. In the rural area around Waterford (as in most of rural western Loudoun) farm buildings have been traditionally arranged in a cluster, preferably near water. They are located on the side rather than the top of a hill away from prevailing winds or in a valley near water.

The architectural styles for farm residences were similar to those used in the village, but over time, farm buildings were modified and expanded with fewer restrictions because of the greater amount of available open land. Along with the main barn and other functional outbuildings, tenant houses are located nearby and add to the overall building cluster. Around Waterford, farms and buildings have been tucked into the distinctive rolling hill and valley landscape.

In the village, the buildings and streets also fit with natural landforms and topography, but because of their diversity and density, they leave a greater impression of man's occupation than in the rural area.



c. Visual Context:

This final component of the visual inventory summarizes and combines the natural setting and man's adaptations to it. As these first two inventory steps indicate, the Waterford area can be divided into two distinct visual contexts: rural and village (Figure 29, page 74). In the rural context, the landforms dominate and provide the setting which contains the farm buildings and structures. The village context is predominantely a built environment similar in character to many urban areas and thus the spaces are enclosed and defined by the structures. There is a clearly defined, sharp edge between the village and the rural area that has been maintained over time and is so rare that it was one of the primary factors leading to the designation of the Waterford Historic District as a National Historic Landmark.

In summary, the inventory indicates that the Waterford area's visual image is formed by a combination of the natural and manmade elements, the essence of which can be expressed as a small, densely settled village tucked into a rolling, rural Virginia agricultural landscape.

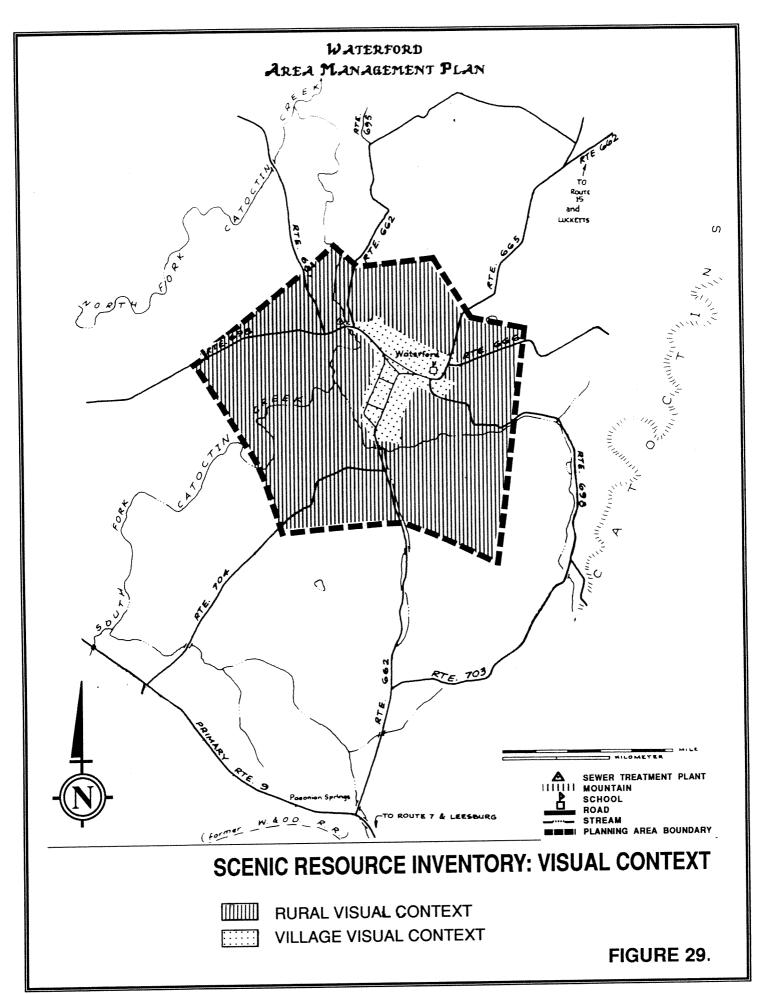
2. Analysis of Scenic Resources

The next stage in a Visual Resource Management Program is to assign a rating or rank to an area based on the inventory findings. It is difficult to rate landscapes due to the inherent subjectivity and potential biases involved. It can, however, be a valid and worthwhile effort, as it is based on the premise that many scenes and landscapes have intrinsic value and meaning to many different people, and those scenes with the most variety, vividness, unity and uniqueness (see Glossary for definitions of these four terms) in a County or region have the greatest potential to be considered by the general public as having high scenic value.*

a. Sensitivity Level**

An initial analysis technique is to define the Sensitivity Level of a scenic resource which is based on the idea of general public

- Defined as a relative measure of people's concern for a given area's scenic quality that is based on an assessment of viewer activity, local values and the broader cultural significance of a specific visual resource.
- "Evaluation and Recommendations Concerning the Visual Resource Inventory and Evaluation Systems Used within the Forest Service and The Bureau of Land Management," Blaise G. Gerden, <u>Our National Landscape</u>, 1979, pp. 296 304.



concern for scenic quality. It is derived from several factors, such as number of viewers, type of viewer (local residents, tourist, daily commuters, etc.), probable expectations, length of time in which viewer interacts with a particular view (travel speed, ability to see along a road, stationary view from a given point), and location (road, home, other building, open field). Areas are placed into one of three categories:

- i. Critical Views (High Sensitivity) Areas that are highly visible from specific locations with the potential to be seen by many people.
- ii. Average Sensitivity Due to landform or topographic changes, these areas are not as easily seen from the same locations by as many individuals.

For the <u>Waterford Area Management Plan</u>, High and Average Sensitivity Levels have been proposed based on visibility from public roads (primarily the Waterford Corridor - Route 662), topography, relative proximity of viewer and sight distance (Figure 30, page 76). Land use alterations within areas of High Sensitivity would be more readily perceived by a greater number of people.

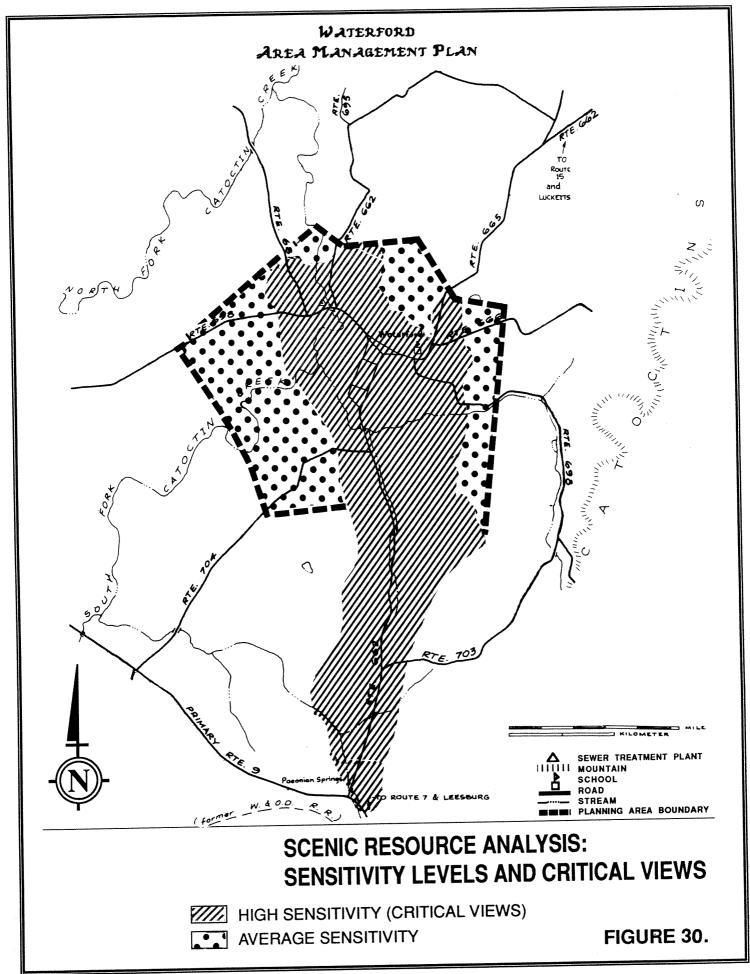
b. Visual Absorption Capability*

The second analysis method that is useful in understanding Waterford's visual resources is Visual Absorption Capability. The three factors that determine Visual Absorption Capability are:

- i. Natural Environment Landforms and vegetation are the most significant influences.
- ii. User perception Similar to the determinations for Sensitivity Level, including number of viewers, location, etc.
- iii. Activities and Land Uses Existing and proposed land uses, and other activities, such as farming, residential development, etc.

Some general guidelines for determining Visual Absorption Capability are:

- i. As distance from the viewer increases, the Visual Absorption Capability increases;
- ii. As the size and scale of a proposed activity increases, the Visual Absorption Capability decreases;
- * Defined as the physical capacity of a landscape to absorb proposed development or management activities and still maintain its inherent visual character and quality.



- iii. Certain areas have an inherently low Visual Absorption Capability, such as ridge tops (easily seen by many people) and edges (such as the sharply defined edge between the village of Waterford and the surrounding rural area);
- iv. As slope steepness and length increases, Visual Absorption Capability decreases;
- v. As vegetative screening increases (natural or planted), Visual Absorption Capability increases.

Figure 31, page 78 shows some examples of how the guidelines can be applied in a general fashion to the Waterford planning area by locating areas with a relatively high or low Visual Absorption Capability.

3. <u>Summary of Scenic Resource Analysis</u>

This section has introduced several new and different concepts to help understand and plan for the Waterford area's scenic resources, the key points of which are summarized below:

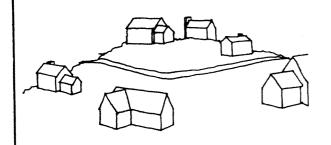
- The scenic resource analysis is based on the general concept of Visual Resource Management as practiced by various federal agencies.
- b. Based on examination of the natural setting and man's adaptations to it, the Waterford area can be divided into two distinct visual contexts of rural and village (Figure 31, page 78).
- c. Based on number of viewers, their general expectations, and view locations, the Waterford area can be separated into areas with Critical Views and Average Sensitivity Levels; these two categories have different implications regarding the effect various land use changes could have on the area's scenic resources (Figure 31, page 78).
- d. There are also various existing natural elements that can determine the Visual Absorption Capability in specific locations to screen or visually block future land use changes and development (Figure 31, page 78).

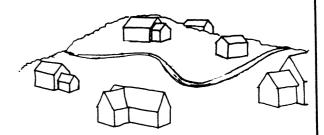
VI. ECONOMIC DEVELOPMENT - TOURISM

Closely related to the historic and scenic resources is tourism, which is dependent on Waterford's historic character and nationwide reputation.

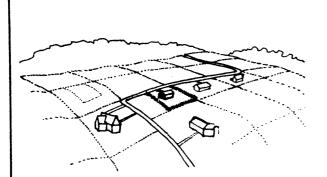
Tourism is currently the second largest industry in the County and is a base industry that requires minimal public expenditures to sustain it. It is current County

Waterford Area Management Plan

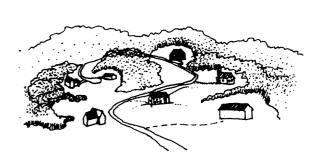




Buildings sited high on the hillside slope or crest are therefore highly visible due to the relatively low visual Absorption Capability. Buildings sited down the hillside are less visually intrusive due to the relatively higher Visual Absorption Capability.



Geometric clearings and houses centered in clearings are highly visible due to the lack of consideration of the Visual Absorption Capabilities of natural landforms and woodlands.



Clearings with natural shapes, emphasizing the land form are less visible as the Visual Absorption Capabilities of natural topography and woodlands have been taken into account.

EXAMPLES OF VISUAL ABSORPTION CAPABILITY

FIGURE 31.

policy, as expressed in the adopted <u>Resource Management Plan</u> (p. 241) and in the efforts of the Office of Economic Development, to encourage growth of the tourist industry, most of which is based on Loudoun's historic and scenic resources. As part of the Washington D.C. metropolitan region with a total population of more than three million people, the County has an enormous tourist market from which to draw.

Tourism in Waterford is currently focused on the three day Waterford Homes Tour and Crafts Exhibit, which drew 30,000 visitors in 1986. The Fair, which takes place annually in early autumn, is estimated to generate at least \$750,000 making it one of the largest single events in the County. In 1986, local craftsmen, civic clubs, and service organizations earned approximately \$175,000 at the Fair. Many Loudoun groups such as the Leesburg Optomist Club, the Waterford PTA, the Loudoun County Junior Women's Club, the Hamilton Ruritan Club, Leesburg Jaycees, Lovettsville Lions, and the Loudoun County Humane Society derive a substantial portion of their annual budgets from the Fair. Approximately \$120,000 was earned by the Waterford Foundation, the sponsoring organization. The rest went to craft demonstrators and local businesses.

The great economic benefit of tourism is its infusion into an area of new money earned elsewhere and left behind to circulate through the local economy. The tourist dollar is used and reused for supplies, utilities, salaries, and retail purchases, and the tourist, directly or indirectly, contributes to retail sales, gasoline, liquor, real estate and income taxes. How much this multiplier effect benefits a particular community depends on the degree of community self-sufficiency - the ability of the community to supply these supporting goods and services. Since Waterford itself can supply virtually none of them, the impact of the tourist dollar generated in Waterford is immediately felt throughout the rest of Loudoun County, which can and does provide the goods and services. The Waterford Foundation, in fact, has a stated policy that it will buy in Loudoun County to the greatest extent possible.

In most cases, the tourist dollar demands an effort on the part of the community to attract it, although the investment is generally less than for the development dollar which can require additional housing, schools, and related services. In the case of the Waterford Fair, almost all of that investment is made by the Waterford Foundation. The result is that for Loudoun County, the tourist dollars from the Waterford Fair are virtually free dollars, requiring little County effort or investment to attract them.

There are no statistics on tourism in Waterford at other times, but the village is often a part of a leisurely Sunday drive that people take through scenic, rural Loudoun. The narrow streets and lack of parking facilities discourage many other visitors, particularly those in buses.

There is a legitimate reluctance on the part of current village residents to support additional tourism, as Waterford is much too small to handle the large crowds, increased traffic, and major commercial development found in places such as Williamsburg or Leesburg. In addition, there is the real danger that too much

tourism could destroy the cultural integrity of the historic resource. Since Waterford is a National Historic Landmark, what happens to Waterford is of relevance to the nation and to future generations. On the other hand, precisely because Waterford is a National Historic Landmark, there is also a responsibility to provide visitors with an opportunity to understand the history of Waterford, and to experience the unique quality of this historic resource.

Tourism in Waterford could also provide increased benefits to the County's revenue base, as it would provide an additional attraction which might encourage visitors to remain overnight in the County. The difficulty lies in finding a balanced approach that provides for the needs and interests of visitors, respects the privacy and lifestyle of the residents, generates an adequate amount of revenue to make the program worthwhile and does not destroy the village as a living community one of the aspects that makes Waterford very different from such museum towns as Williamsburg, and indeed one of the aspects of the village that visitors appreciate most.

The question of whether or not to encourage tourism at times other than during the Fair is a controversial one in the village. Up to this point, the Waterford Foundation has been extremely reluctant to encourage tourism during the rest of the year. However, if village residents and groups such as the Waterford Citizens' Association agreed that it should be done, the Foundation, with its record of continuity and experience in running the Fair, would be the logical organization to manage any additional tourism.

An expanded tourism program could include an interpretive walking tour designed to accommodate visitors brought in by bus. An adequate walkway system and bathroom facilities would be necessary to accomplish this type of tour program. Such tours should be scheduled and planned, perhaps with the cooperation of the County's Group Tour Coordinator. The revenue from the bus tours could go toward village improvements, such as walkways, and to buy land to protect the scenic quality of the National Historic Landmark.

This interpretive program could also be used as part of the education of Loudoun students in local history. The Waterford Foundation, with the encouragement of the Loudoun County School Board and the help of the National Endowment for the Humanities, has already established a living history program in the one room schoolhouse it owns on Second Street. Loudoun County school children can experience a typical school day of the 1880's when they visit Waterford. This project has been developed by the Foundation and is being provided at no cost as part of its education program.

It is important that village residents examine and address the issue of tourism because if it is ignored or opposed without sufficient investigation then Waterford could have a tourism program developed by private interests that might not adequately address the long-term integrity of the historic resource or the needs of village residents.

Table 5 (following page) summarizes the existing conditions and major inventory findings for the village of Waterford and the surrounding rural area.

TABLE 5 SUMMARY OF EXISTING CONDITIONS

VILL	AGE	REMAINING PLANNING AREA
LAND AREA	136 acres	1,314 acres
POPULATION	210 people	30 people
LAND USE	Predominantly residential	Predominantly agricultural
DWELLING UNITS	91	10
ZONING	Mixture of R-2, R-1, C-1	Mostly A-3, some R-1
WASTEWATER TREATMENT	LCSA owned plant - Available capacity to approximately double existing population	Soil conditions vary Approxi- mately one third of area has good potential for septic
WATER SUPPLY	No central system - Individual wells with variable yields	Individual wells with variable yields
TRANSPORTATION	Two-lane paved roads with lack of parking and pedestrian space	
ELEMENTARY SCHOOL	Declining enrollment	Same
ENVIRONMENT	Catoctin Creek floodplain, steep slopes, variable soil conditions and numerous mature trees	Catoctin Creek floodplain, steep slopes, varying soil condition and scattered woodlands
HISTORIC	County Historic District, State Historic Register and National Landmark	National Historic Landmark and State Historic Register
SUBDIVISION ACTIVITY	None recently	Areas with most subdivision activity are located between Routes 662 and 704 southwest of the village and along Route 681 to the northwest of the planning area
TOURISM	Three day annual Fair in October	Waterford Corridor (Route 662) provides setting and major entry